

People's Democratic Republic of Algeria
Ministry of Higher Education and Scientific Research
Kasdi Merbah Ouargla University
Faculty of Letters and Languages
Department of Letters and English Language



Dissertation submitted in partial fulfilment of the requirement for the
Master's Degree in field of English Language and Literature

Major: Linguistics

**A Needs Analysis Approach to Design a Course in English for Biochemistry
Purposes :Matching Aims to Needs ,
The Case of Third Year Undergraduate Biochemist Students in the Department of
Biology at Kasdi Merbah University Ouargla.**

Presented and publicly defended by
Amirouche Nadia and Bousmaha Mohammed Fouzi

Supervised by

Dr.Sadoune Farida

Jury

Mrs. Mesloub Dalila	Kasdi Merbah Univerity Ouargla	Chairperson
Dr. Sadoune Farida	Kasdi Merbah Univerity Ouargla	Supervisor
Dr. Bourahla Djelloul	Kasdi Merbah Univerity Ouargla	Examiner

Academic Year:

2021-2022

Acknowledgements

This work would have never been possible without our teacher and idol Dr. Sadoune Farida, we would like to express our deep gratitude for her precious and valuable guidance, for her patience, and precious time she devoted to the preparation of our research, she never hesitated to help us, she was more than a supervisor for us. She always pushed us to do our best, her advice all along this research was of extreme pertinence, and we had the immense chance to work with her. For that, we can never truly thank her enough.

We would also thank all our teachers at the department, who contributed to our knowledge acquisition all those years.

Finally, we would like to thank the board of examiners who took the time and energy to read and evaluate our work

Abstract

The conducted research investigates the significant role of needs analysis in elaborating an efficient and effective ESP course. This paper is concerned with the third year undergraduate students of biochemistry at KMUO. Our work investigates whether the ESP course provided to third year biochemist students respects the needed procedure and follows the listed approaches or not. Both qualitative and quantitative approaches have been used; two tools to gather the data were employed a questionnaire and a semi-structured interview. The findings show that a recycling of the current course design is urgently needed for the benefit of the students; the productive skills were the most important aspects of their English language needs, in addition to their needs regarding vocabulary for specific use when reading scientific articles as well as translating articles. It was expected that the current research would provide more attention to the situation of ESP in the field of biochemistry as well as the crucial role of needs analysis in the fulfillment of the learners' purposes.

Key- words: ESP, Needs analysis, course design, ESP course approach, EST.

Dedications

I dedicate this work to my mother who as far as I remember always stood by my side no matter what, she is the reason for what I become, she never lost hope in me and she was always her to push me farther when I wanted to give up, all the words would not be enough to thank you, to my father who always believed in me and taught me how to be independent in my life.

To my beloved husband and my partner Bousmaha Fouzi with whom I took this adventure of studying while we were building our life together and this only made our relationship stronger and special, thank you for bringing so much joy and happiness into my life

To my life, my love, my angel Malak, you are the gift God has sent me to forget all the bad experiences I went through in my life, you are my little sunshine.

To my friends with whom I always felt free to speak, to share my joy and sadness, to make my heart less heavy, my dear Salsabil Nariman Braitel , Dihia Berkal , and Ryal Oudini.

I also would like to thank my brother Hakim and Nadir, my father and my mother-in-law, my sisters and brothers-in-laws: Nassim, Mouncef, Abir, Amani.

Amirouche Nadia

Dedications

It is with a genuine gratitude and warm regard that I dedicate this work to my beloved wife, without whom this work would have never been possible.

To my daughter who lightens up my world.

To my mother who has always been supportive.

To my father who always inspires me.

To my brothers and sisters.

Bousmaha Mohammed Fouzi

Table of Contents

Acknowledgements	i
Abstract.....	ii
Dedication	iii
Table of Contents.....	v
List of Abbreviations and Acronyms.....	ix
List of figures.....	x
List of pie charts	xi
List of bar graphs	xii
List of Tables.....	xiii
General Introduction.....	1

CHAPTER ONE

ESP AND ESP COURSE DESIGN

Introduction

1.1 Definition of ESP.....	5
1.2 ESP VS. General English.....	5
1.3 EST	6
1.4 ESP course design	7
1.4.1 Definition of course design	7
1.4.2 Approaches to ESP course design	7
1.4.2.1 Language centered approach	7
1.4.2.2 Skill-centered approach	8
1.4.2.3 Learning-centered approach	10
1.4.3 Steps in ESP course design	11
1.4.3.1 Needs analysis	11
1.4.3.2 Determining goals and objectives.....	12
1.4.3.3 Content conceptualization.....	12

1.4.3.4 Selection and development of materials activities.....	13
1.4.3.5 Assessment and evaluation.....	14
1.4.4 Issues in designing ESP course.....	15
1. The identity of the ESP teacher.....	15
2. General English VS Specialized English.....	15
3. Mixed-ability classes.....	16
4. The Required Communicative Skills in the learners' Future Career.....	16
Conclusion	16

Chapter Two

Needs Analysis

Introduction.....	17
2.1 Definition of needs analysis.....	17
2.2 The importance of needs analysis.....	18
2.3 Needs taxonomy.....	19
2.3.1 Target needs.....	20
2.3.1.1 Necessities.....	20
2.3.1.2 Lacks.....	20
2.3.1.3Wants.....	21
2.3.2 Learning needs.....	21
2.4 Components of ESP need analysis.....	22
2.4.1 Target Situation Analysis.....	22
2.4.2 Learning Situation Analysis.....	23
2.4.3 Present Situation Analysis.....	23

2.5 Needs analysis data collection methods.....	24
2.5.1 Questionnaires.....	24
2.5.2 Observation.....	25
2.5.3 Interview.....	25
2.5.4 Analyzing authentic texts.....	26
2.6 Steps in conducting needs analysis.....	27
Conclusion.....	27

Chapter Three

DATA COLLECTION, ANALYSIS, AND DISCUSSION

Introduction	29
3.1 Methodology	29
3.2 participants.....	29
3.3 Data collection instruments.....	30
3.3.1 Description of the questionnaire.....	30
3.3.2 Description of the semi-structured interview.....	30
3.4 Data analysis and discussion.....	31
3.4.1 Students ' questionnaire analysis.....	31
3.4.2 Students ' questionnaire results discussion.....	50
3.4.3 The semi-structured teachers' interview analysis.....	53
3.4.4 Teacher semi-structured interview results discussion	58
3.5 Pedagogical implications.....	62
3.5.1 Course design.....	62

3.5.1.1 Aims of the course.....	62
3.5.1.2 Goals and objectives.....	62
3.5.1.3 Course content	63
3.5.1.4 Course organization	64
3.5.1.5 Classroom activities	64
3.5.1.6 Material selection	65
3.5.1.7 Evaluation and assessment.....	66
3.7 Sample lessons	66
Conclusion	69
General conclusion and recommendation	70
References	72
Appendices	
Appendix 01	
Appendix 02	
Appendix 03	

List of Abbreviations and Acronyms

CLT: **C**ommunicative **L**anguage **T**eaching

CNP: **C**ommunication **N**eeds **P**rocessor

EGP: **E**nglish for **G**eneral **P**urposes

EFL: **E**nglish as a **F**oreign **L**anguage

ESP: **E**nglish for **S**pecific **P**urposes

EST: **E**nglish for **S**cience and **T**echnology

LMD: **L**icense **M**aster **D**octorate

NA: **N**eeds **A**nalysis

TSA: **T**arget **S**ituation **A**nalysis

List of Figures

Figure 1.1: Subclasses of EST.....	6
Figure 1.2: A language centred approach to course design.....	8
Figure 1.3: A skill- based approach to course design.....	9
Figure 1.4: Learning- centered approach to course design.....	10
Figure 2.1: Classification of Needs Analysis.....	20
Figure 3.1: Mandatory signs; chemicals manufacturing.....	67

List of Pie Charts

Pie Chart 3.1: Gender of informants.....	31
Pie Chart 3.2: Age of the informants.....	32
Pie Chart 3.3: Students 'grades in the baccalaureate examination.....	33
Pie Chart 3.4: The importance of English in students 'University studies.....	33
Pie Chart 3.5: The importance of English in students' future career.....	34
Pie Chart 3.6: Students' general English background.....	35
Pie Chart 3.7: Students' English for science background.....	36
Pie Chart 3.8: Self evaluation of the student's level in English.....	37
Pie Chart 3.9: Students' weaknesses in English language.....	39
Pie Chart 3.10: Students preferred number of sessions.....	42
Pie Chart 3.11: Students' preferred time of studying.....	43
Pie Chart 3.12: Students' willingness to study on week ends.....	43
Pie Chart 3.13: Students' preferred ways of learning.....	46
Pie Chart 3.14: Students ' preferred teaching materials.....	47
Pie Chart 3.15: Students ' preferred activities.....	48
Pie Chart 3.15: Students ' preferred frequency of assessment.....	49
Pie Chart 3.16: Students' preferred way of assessment.....	50

List of Bar Graphs

Bar Graph 3.1: Students' ranking of the four English skills.....	38
Bar Graph 3.2: Students' objectives for studying English.....	40
Bar Graph 3.3: Students' evaluation of the most important English language skills.....	41
Bar Graph 3.4: Students' preferred ways of studying.....	44
Bar Graph 3.5: Preference for classroom interaction.....	45

List of tables

Table 3.1: The gender of the informants	31
Table 3.2: Age of the informants.....	32
Table 3.3: Students 'grades in the baccalaureate examination.....	32
Table 3.4: The importance of English in students 'University studies.....	33
Table 3.5: The importance of English in students' future career.....	34
Table 3.6: Students' general English background.....	35
Table 3.7: Students' English for science background.....	36
Table 3.8: Self -evaluation of the student's level in English.....	37
Table 3.9: Students' ranking of the four English skills.....	38
Table 3.10: Students' weaknesses in English language	39
Table 3.11: Students' objectives for studying English	40
Table 3.12: Students 'evaluation of the most important English language skills	41
Table 3.13: Students preferred number of sessions	42
Table 3.14: Students' preferred time of studying.....	42
Table 3.15: Students' willingness to study on weekends	43
Table 3.16: Students' preferred ways of studying.....	44
Table 3.17: Preference for classroom interaction.....	45
Table 3.18: Students' preferred ways of learning.....	46
Table 3.19: Students ' preferred teaching materials.....	47
Table 3.20: Students ' preferred activities.....	48
Table 3.21: Students ' preferred frequency of assessment.....	49
Table 3.22: Students' preferred way of assessment.....	50

1. Background of the study

Since the early 1960s, ESP course design has steadily developed to become one of the most significant aspects of EFL teaching. According to Hutchinson and Waters (1987) “ESP is not a planned and coherent movement, but rather a phenomenon that grew out of a number of covering trends.”(p.6)

English is widely acknowledged as the international language of science and technology. This encourages a large number of academics and scientists to learn it in order to access various scientific materials and references. The biology field, which appears to be one of the most concerned with recent scientific and technical breakthroughs, is undeniably in desperate need of making information and research, which is primarily available in English, more accessible. As a result, it appears that teaching such a language to biologist students is more than a requirement for academic or professional objectives.

According to several studies ESP learners and biochemists, in particular, encounter difficulties in productive skills such as writing and speaking. They frequently struggle to understand native speakers who speak too quickly in seminars and conferences. They also fear the act of writing which is another handicap. They lack the skills needed to write research papers and articles, as well as the ability to adhere to grammatical structures and conventions.

Designing an ESP course that will match the needs of the learners and help them meet their goals can best be achieved by starting with a comprehensive needs analysis. The latter explores what will motivate learners to acquire language in the most efficient way and play a crucial role in English for Specific Purposes course development.

2. Statements of the problem

Biochemist students need to use English both during and after their graduation. They need it during their graduation to read and understand articles, references, and sources and after their graduation, because some work positions may require the ability to communicate in English, therefore the Ministry of Higher Education and Scientific Research implemented English as a subject in the program of third-year biochemist students. Unfortunately, as we can notice the syllabus is not provided most of the time, so the English teachers have to design the courses by themselves and the majority do not take into consideration the needs of the students or their target needs, therefore generally end up providing a more general English course than a specialized one. Thus a needs analysis is necessary to provide an appropriate

course that responds to the third-year biochemist students' needs in the department of biology at Kasdi Merbah University Ouargla.

3. The rationale:

This study spots a considerable light on:

- Raising awareness on the crucial role of needs analysis in designing an effective course.
- Promulgate the necessity of meeting the students' needs to their aims while designing a course.

4. Aim of the study

Based on the problem being raised, the overall aim of this study is to design a suitable ESP course for third-year biochemist students of Kasdi Merbah University Ouargla, by analyzing their needs and lacks and by matching it to their aims and by choosing the appropriate approach for the ESP course design in order to recycle the actual courses provided in the Biology department.

5. Research Questions

In an attempt to reach the aforementioned objectives, the following questions are raised:

1. What specific needs do third-year biochemistry students in the biology department of Kasdi Merbah Ouargla consider as most important in their English course regarding their lacks and wants?
2. What is the most appropriate teaching approach that suits the third-year biochemistry students' needs?
3. What are the most appropriate teaching materials for them?
4. How can the students be assessed effectively? and how to evaluate the efficiency of the courses designed?

6. Research hypothesis

Based on previously mentioned questions, it hypothesized that:

1. The current ESP courses that are taken in the department of biology can be improved by identifying the students' needs lacks and wants.
2. The skill-based approach seems the most appropriate.
3. Needs analysis is the major step that will allow the choice of the materials (visual aids, realia).
4. Students' feedback and tests are crucial for the evaluation of the course efficiency.

7. Methodology

This research uses a combination of quantitative and qualitative approach; quantitative data will be gathered from the students' questionnaire concerning what they need English for while qualitative data will be gathered from the semi-structured interview. In this study, we have adopted the descriptive method mainly because it aims to describe the correlation between two variables, an independent variable which is the needs of the biochemistry students at Kasdi Merbah University Ouargla, and a dependent variable which is the course design.

For the purpose of collecting data, we have used two research tools a questionnaire designed for the biochemistry students and an interview designed for the English teachers at the Biology department.

The sample of our research is 50 students, all females from a total of 56 students of third-year biochemistry for the questionnaire, and 03 teachers for the semi-structured interview.

8. Structure of the dissertation

Our dissertation is divided into three chapters:

Chapter one explores the literature in the area of ESP with the definition and the comparison between ESP and EGP. Course design has also been dealt with including the definition, the approaches, and the steps in designing an ESP course.

Chapter two highlights the needs analysis in terms of definition, purposes, and steps.

Chapter three identifies the needs of the students using data collection and data analysis as research instruments, the results than have been analyzed in order to design an efficient course it also deals with the design of the ESP courses themselves their content and organization, and some lessons samples.

9. Definition of the keys terms

ESP is a branch of EFL (English as a Foreign Language) it is not that a language course that is different from a general English course in terms of language and methodology, but rather an approach to learning/teaching whereby the content and methodology are based mainly on learners needs to learn the language (Hutchinson and Waters,1987). Moreover, according to Paltridge and Starfield (2013) “English for specific purposes refers to the teaching and learning of English as a second or foreign language where the goal of the learners is to use English in a particular domain. The teaching of English is inspired by the L2 learners’ needs for communication in different areas, namely English for academic purposes, English for occupational purposes, and English for business purposes.” (p.2)

Needs analysis is the techniques and procedures for collecting information to be used in syllabus design (Nuan, 1988) it is also stated that needs analysis is the cornerstone of ESP and leads to a much focused course (Dudley -Evan and ST John, 1998).

Course design is a negotiation process in which learners play an essential role Thus it is concerned primarily with how much design should go into a particular course that is how much to be negotiated with learners, in other words, course design is not a teacher-centered approach rather it is an ongoing process based on collecting the maximum information about teaching and learning experiences (Hutchinson & waters, 1987).

ESP Course Approach It describes the nature of an approach as a set of correlative assumptions dealing with the nature of the subject matter to be taught (Richard, 2006, as cited in Nurpahmi, 2016).

EST According to Trimble (1985) “EST covers the areas of English written for academic and professional purposes and of English written for occupational and vocational purposes, including the often informally written discourse found in trade journals and scientific and technical materials written for the layman.”(p.8)

Introduction

ESP has been considered a new field in the domain of teaching English as a foreign language. The emergence of ESP has been the result of diverse inducements. The most pertinent one was the growing global interest in science and technology, which has been broadly extended to developing countries. ESP strives to meet learners' needs. It is not an easy task to provide learners with language support that will successfully address their academic or occupational needs. This can be possible only by designing a specific course for this purpose. This chapter examines the literature review of some features of ESP as well as ESP course design, its approaches and major steps, as well as some issues in course design.

1.1 Definition of ESP

It is problematic to give only one clear definition to ESP, simply due to the fact that from its first emergence in 1960 many scholars have tried to define it. To this effect, Strevens (1977) has written "producing a simple and straightforward definition of ESP is not an easy task." (p.101). ESP does not involve a particular language, teaching material, or methodology. Its needs to be perceived as an approach, not a product. As Hutchinson and waters (1987) have stated "ESP is not a particular part of language or methodology nor does it consist of a particular type of teaching material understood properly it is an approach to language learning which is based on learner need."(P.19)

This idea has also been emphasized by the fact that ESP is based on meeting the learners' needs with no accentuation on a given methodology or a specific type of teaching material. Other authors such as Mackay and Mountford (1978) have spotted the light on the utilitarian purpose of ESP arguing that the latter seems to be linked to the workplace.

Moreover, Basturkman (2006) has emphasized on the idea that the main purpose of learning English is more related to gaining linguistic competencies academically or professionally than for a general education benefit. Therefore, learners need to learn a foreign language for use in their specific field or their future jobs.

1.2 ESP VS. General English

According to Hutchinson and Waters (1987) theoretically, there is no difference between ESP and EGP, but practically there is a considerable amount of differences between the two.

The difference between ESP and EGP is slight and there is an overlapping connection proportion between both. To establish some clarification related to their relation Widdowson (1983) has established distinctive features of ESP and EGP. Whereas EGP focuses on education mainly because of the impossibility of predicting learners' future needs. ESP focuses on the training because English will be used in vocational and academic contexts; therefore, selection of the appropriate material will be easier, and the content in the syllabus needs to have a high surrender value, most relevant to the vocational context.

ESP teaching approach is known to be a learner-centered approach focusing on the learners' needs and goals, whereas the general English approach is a language-centered approach focusing on language skills and cultural aspects of English speaking community.

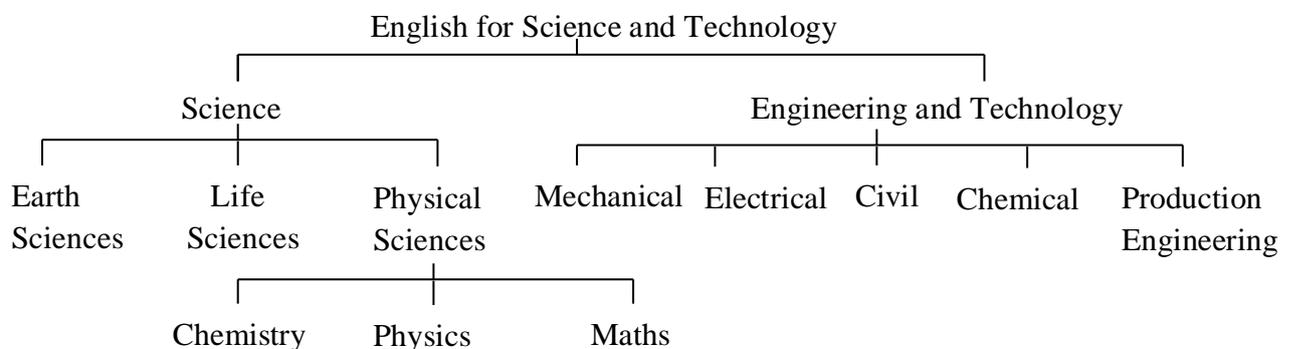
Additionally, ESP learners are adults that are aware of their language needs (Hutchinson and Waters, 1987). While EGP learners are generally pupils at schools with the foremost purpose of succeeding in examinations.

1.3 EST

According to Trimble (1985) "EST covers the areas of English written for academic and professional purposes and of English written for occupational and vocational purposes, including the often informally written discourse found in trade journals and scientific and technical materials written for the layman."(p.8)

Figure 1.1

Subclasses of EST, adapted from (Swales, 1988).



It is clear from the Diagram that Swales (1988) has sub-classed EST in terms of topic content into two groups "science" and "engineering and technology ". EST is often more associated with teaching English for academic purposes, to assist students to succeed in their academic and professional settings.

1.4 ESP course design

1.4.1 Definition of course design

ESP course design is a procedure for gathering data to design an effective course. It is an ongoing and cyclical process and a continuous and dynamic operation that targets learners by supplying them with a particular knowledge that will allow them to use language in their specific field. Hutchinson and Waters (1987) have defined course design as “the process by which the raw data about a learning need is interpreted to produce an integrated series of teaching-learning experiences, whose ultimate aim is to lead the learners to a particular state of knowledge.”(p.65)

ESP learners’ needs and expectations should be given more attention (Richards, 2001). Therefore, we can describe ESP course design as a negotiating process where learners’ needs figure prominently, consequently a learner-centered approach. The task of designing a course is not easy because it is a learner-centered approach. In addition, that it is not always easy to identify learners' needs and expectations (Haddam, 2015).

1.4.2 Approaches to ESP course design

An approach is axiomatic. It describes the nature of an approach as a set of correlative assumptions dealing with the nature of the subject matter to be taught (Richard, 2006, as cited in Nurpahmi, 2016). There are three main approaches to ESP course design. Those approaches are explained as follows:

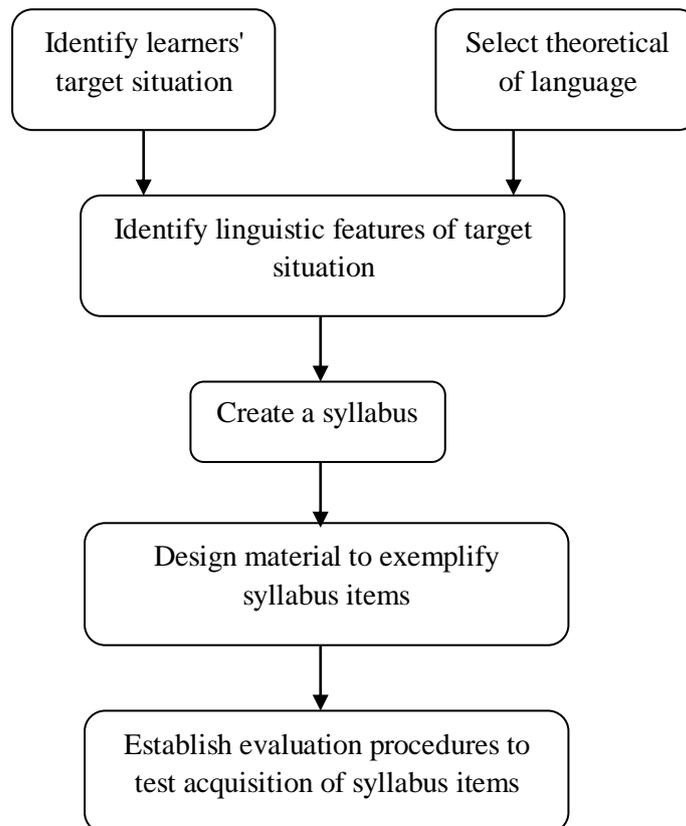
1.4.2.1 Language centered approach

Its aim to: “draw as direct connection as possible between the analysis of the target situation and the content of ESP course.”(Hutchinson and Waters, 1987, p.65, p.66). In this approach, course content is created once the linguistic characteristics of the target situation are identified. It is the simplest and perhaps the most familiar to English language teachers.

The process of language-centered approach goes as described in the following figure.

Figure 1.2

A language centred approach to course design, adapted from (Hutchinson and Waters, 1987)



Criticism

However, this approach has been criticized for several reasons; Hutchinson and Waters (1987) have identified the major weaknesses as follows:

It does not take into consideration learners' needs. Therefore, it is solely a learner-restricted and not a learner-centered approach. Moreover, it neglects some factors that take part in the course. In addition, it is static, systematic, and decontextualized, and it gives much importance to linguistic form rather than developing skills to communicate effectively in the target situation.

1.4.2.2 Skill-centered approach

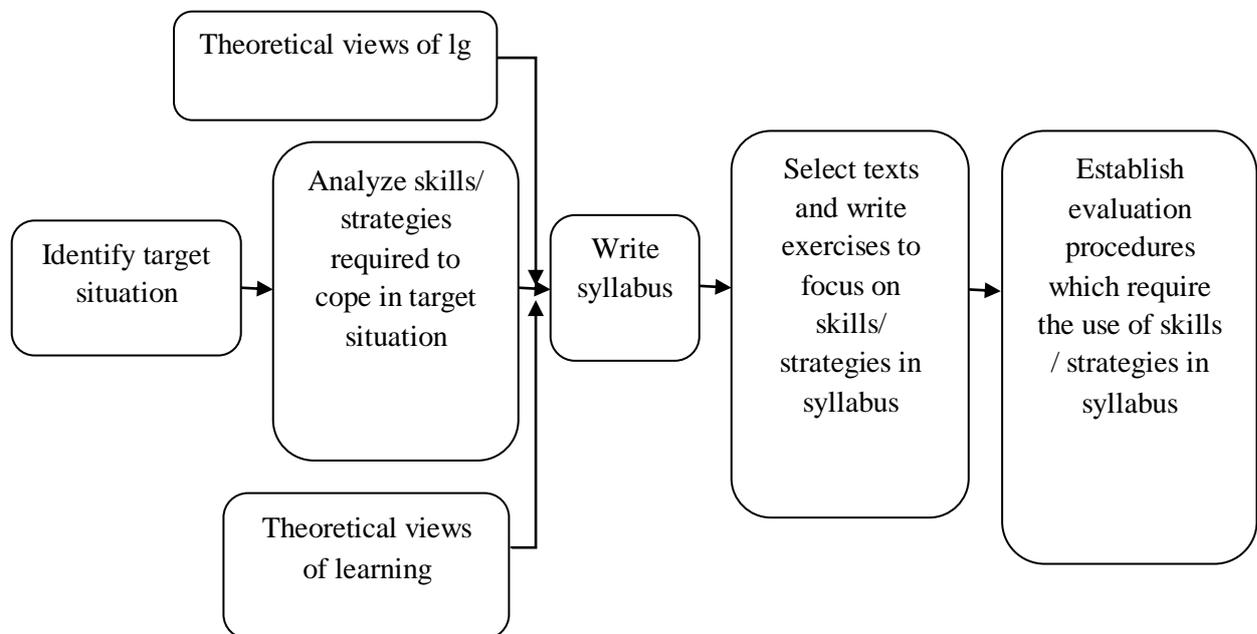
The idea of specific registers of English as a basis for ESP and the actual constraint on learning imposed by limited time and resources prompted the development of a skill-centered approach. Its aim is not to supply a specific corpus of linguistic knowledge, but to help learners become better information processors. Hutchinson and Waters (1987) have been viewed that "A skill-centered course, therefore, will present its learning objectives (though

probably not explicitly) in terms of both performance and competence.”(p.49). Therefore, aims to continually enhance students’ skills even after the end of the course. It is based on a thorough examination that assists in identifying the underlying competence that enables people to perform in the target setting, as well as assisting course designers in determining what the ESP students brought with them to the ESP course. This is because learning is giving and taking from both sides the teacher and learner. Besides that, the ESP learner is an adult who is experienced and has his own learning strategies that need only to be discovered.

The process goes as described in the figure below

Figure 1.3

A skill- based approach to course design, adapted from (Hutchinson and waters, 1987).



Criticism

Hutchinson and Waters (1987) have stated “...Yet, despite of its concern for the learner, the skills-centered approach still approaches the learner as a user of language rather than as a learner of the language. The processes it is concerned with are the processes of a language use not of language learning.”(p.70). We can see that even if the skill-centered approach focuses more on the learner, it still visualizes the learner as a simple user of language and not an active learner of a language.

1.4.2.3 Learning-centered approach

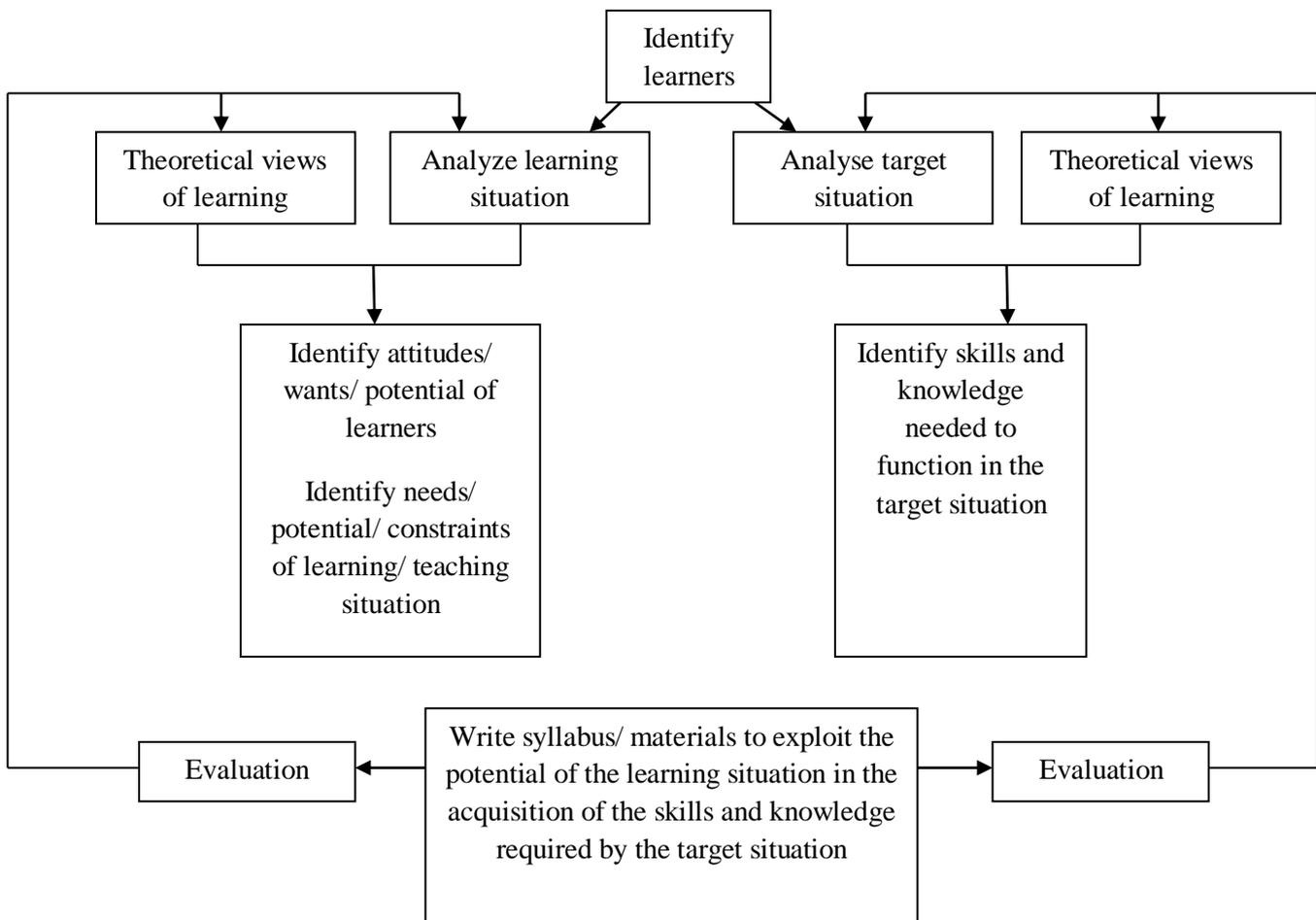
The term learning-centered approach introduced by Hutchison and Waters (1987) is seen as a process in which the learner uses what knowledge or skills they have to make sense of the flow of new information. It is an internal process, which is crucially dependent upon the knowledge the learner already has and their ability and motivation to use it. It is a process of negotiation between individuals and society. Society sets the target and individuals must do their best to get as close to that target as is possible.

It is based on the principle that learning is totally determined by the learner, although teachers have some control over what is taught, the learner is solely responsible for what they learn. Learning is seen as a process in which learners use the knowledge or the skills they have in order to make sense of the flow of new information. Learning; therefore is an internal process, which is crucially dependent upon the knowledge the learners already have and their ability and motivation to use it (Sysoyev, 2000).

The process goes as described in the figure below

Figure 1.4

Learning- centered approach to course design, adapted from (Hutchinson and Waters, 1987)



1.4.3 Steps in ESP course design

Designing an ESP course is described by Dudley-Evans and St John (1998) as a set of phases. According to Graves (1996), the steps in designing an ESP course can be divided into six steps. Those steps are:

- 1- Assessing needs.
- 2- Formulating goals and objectives.
- 3- Developing materials.
- 4- Designing an assessment plan.
- 5- Organizing the course.
- 6- Conceptualizing content.

According to Dudley Evans and St John (1998) ESP course design steps consist of need analysis, course design, teaching/learning, assessment and, evaluation.

1.4.3.1 Need analysis

Several scholars have described needs analysis; e.g. Munby (1978), Nuan and Clarice (1996), Robinson (1991), Hutchinson and Waters (1987)...etc. They all seem to agree that needs analysis is the cornerstone of ESP course design and that the rationale for this step is to assist the practitioner in the process of designing the course because needs analysis provides raw data about the learners' needs and the learning needs. Numerous methods can be employed to gather data that will serve as a solid foundation for course design. Jordan (1997) states some, such as tests, self-assessment, observation, monitoring, structured interview, diaries evaluation, and questionnaire.

The result of the needs analysis will assist the ESP practitioner in identifying important students' information, the teacher will be aware of their future professional requirements, as well as their language skills requirements and inadequacies, and the practitioner can use this information to identify the language course's objectives and select material that satisfies those needs (Simion, 2015). As a result, doing a need analysis is essential for determining curriculum content, teaching materials, and methods that will engage

students. That is to say that all the other steps of designing a course will depend on the needs analysis results.

Hutchinson and Waters (1987) have claimed that needs analysis should be an ongoing process carried out during each course since the learner's needs are changing too. Therefore, it is useful to check and reassess the conclusions drawn up from the needs analysis.

1.4.3.2 Determining goals and objectives

The second step in course design is determining goals and objectives. It is the outcome of needs analysis (Hutchinson and Waters, 1987). "It is pivotal to determine the reasons for teaching a course and what learners need to get from it". (Haddam, 2015, p.54). As Graves (1996) states, goals are general statements or final destinations, that the students need to achieve. Therefore, it should precisely reflect what is expected from students and the reason students are enrolled in this course.

In ESP, goals are directed toward developing learners' communicative competence. Corder (1973) has stated that the syllabus is directly related to the learner. In other words, objectives should be what the learner wants for the purpose of his social behavior. In ESP, communicative goals are of great concern due to the fact that ESP is concerned with the communicative approach (communicative language, teaching CLT) (Chenyiic, 2010). He adds that the communicative goal is suitable for ESP learners because they utilize English in real situations. The CLT approach is the most appropriate method in an ESP teaching context where learners are motivated because they learn through tasks and problem-solving activities.

1.4.3.3 Content conceptualization

The third phase of the design process is content conceptualization. In this step the teacher will have to select and analyze carefully the needed content correlated to the needs analysis and objectives, the content needs to be engaging, motivating as well as functional too. To this effect, Swan (1990) has mentioned "In ESP, the issue is not which syllabus to choose but how to integrate more than one in order to keep learners motivated and to enhance the learning process."

Reilly (1988, as quoted in Xenodohidis, 2002) gives some practical guidelines for content choice and design. According to Reilly, practitioners first need to define what the students should be able to do as exactly and realistically as possible, as the result of the

instruction. Then, they should rank the syllabi in order of importance according to the desired outcomes. After that, they evaluate available resources and match them with the syllabi. Next, they designate one or two syllabi as dominant. Also, they review how combination and integration of syllabus types can be achieved and in what proportion. Finally, they translate decisions into actual teaching units.

In this phase, it is important to determine language functions and language expressions related to the field. Whereas language functions are things the speakers do with their language in communication (Savignon, 1983). Language expressions are utterances that are expressed in an appropriate context for a particular function (Van Ek, 1977). According to Savignon (1983), it is understanding and mastering those language functions and language expressions are important in communication.

The content should be interesting, useful, and motivating to students. This can be realized if the content is selected from learners' areas of expertise. The information obtained from the assessment of learners' needs helps the ESP teacher to determine the content of the course (Basturkmen, 2010). Furthermore, the content should be informative; that is to say, the instructor has to establish it or update it according to the learners' level (Lowe, 2009).

1.4.3.4 Selection and development of materials and activities

At this level of course design, the teacher must cautiously select material that will allow the efficient delivery of the course. The teacher will transform the course into clear teaching materials. According to Hutchinson and Waters (1987), it is a process of turning the course into intelligible teaching materials through the implementation of the following tasks; materials evaluation, materials development, and materials adaptation.

According to Graves (1996, as quoted in Xenodohidis, 2006) in order to select materials, the following issues should be taken into account. Firstly, the effectiveness in achieving the course purpose. Secondly, the appropriateness of the material, so that the students will feel comfortable. This means that the material will be relevant to their interests and language level; thirdly feasibility so that the material will be in accordance with the student's capabilities and the course will not prove too difficult for them. Choosing material may mean the development of new material, collection of various materials, or adaptation of existing ones.

According to Gardner & Miller (1999); the sources of materials can be published materials such as textbooks, journals, or magazines. It can also be from real speech (lectures, seminars), also from specially written or simplified and adapted from public materials, or instances of real speech.

Xenodohidis (2006) has made some suggestions that are helpful at this stage. According to him, any activity-based task should prepare students to deal with situations relating to their future profession. The shortage of material might be compensated for by assigning specific activities linked to the future task using authentic material is suggested. Furthermore, communication situations must be included since they provide a different dimension to language learning. Simulation games and problem-solving activities appeared to be suitable and appealing to the students. The four language skills must be connected to a real-life situation. Task aims at activities that will enable students to deal with situations related to their future employment.

1.4.3.5 Assessment and evaluation

The last step, but not the least, is assessment and evaluation. Assessment refers to the determination of students' proficiency, whereas evaluation refers to the process of collecting data and interpreting information related to an educational program (Nuan,1990 quoted in Xenodohidis, 2006). That is to say, the assessment indicates the learners' knowledge and abilities in English whereas evaluation reflects the student's reasons for failing or succeeding, as well as strategies to improve their learning. In addition, assessment can provide feedback on the course's effectiveness and in general will be a continuous part of the entire process.

Course evaluation should be a part of the teaching process. The practitioner should be aware of whether the goals and objectives were met, whether the teaching methods were effective and whether new procedures should be included in the course design process.

According to Douglas (2013) evaluation can be conducted for several purposes such as giving learners the opportunity to demonstrate what they have learned and what they can do with the language in real-life situations, gathering feedback on students' progress, assisting teachers in confirming assessments and making decisions, and providing some standardization by which performance and progress will be judged.

1.4.4 Issues in designing ESP course

An examination of ESP literature has spotted the light on some key points that the course designer should pay close attention to them. We will state the most relevant findings to our research.

1. The identity of the ESP teacher

It is a main point of contention whether the ESP teacher should be a language teacher or a subject matter expert. Despite the fact that the prior has experience in language course design, he lacks experience in the ESP domain. The latter has the necessary knowledge and expertise in the field but lacks the linguistics ability to teach. Dudley Evans & St John (1997) proposed the team teaching approach as one of the possible solutions to this problem. According to Jordan (1997), it is joint teaching or sharing of teaching by both the subject specialist and the English tutor. The team-teaching approach is a two-way process where the subject specialist provides information about the learner's target situation to the ESP teacher and where the ESP teacher raises the awareness of the language of the subject matter teacher (Hutchinson and Waters, 1987).

2. General English VS Specialized English

ESP learners should normally have a good command of their English language before enrolling in the ESP course designed to learn specialized knowledge about their fields. Nevertheless, for efficient communication, learners still require certain general academic skills. According to Gathouse (2001) to improve the learner's communication competencies and keep them interested, the instructor must strike a balance between general language skills and subject matter.

3. Mixed-ability classes

Mixed-ability classes refer to classes in which students have varying levels of achievement, participation, and eagerness to learn. Bremner (2008) pointed out that mixed-ability classes do not just contain students with different abilities but also students with a range of learning styles and preferences. Furthermore, Lyle (1999) and Bremner (2008) have stated that they are considered to be a ubiquitous occurrence. Students are divided into classes based on their age and academic year. They are categorized at random, regardless of their attainment and level of ability. This heterogeneity can be the origin of situations that may

challenge teachers while trying to allow all learners the opportunity to learn and succeed. One of the solutions the course designer may follow is to establish a minimum level of language proficiency (Yognan and Kaylani, 1996 Quoted in Gathouse, 2001).

4. The Required Communicative Skills in the learners' Future Career

Predicting or guessing all of the abilities and incorporating them into an efficient syllabus is not an easy task for the course designer. To deal with these abilities, Cummins (1979) suggests a dichotomy: professional communication skills and everyday communication skills (quoted in Gathouse, 2001). The former refers to the ability to communicate in academic settings, whereas the latter pertains to everyday casual communication. Gathouse (2001) lists three abilities: the ability to employ more generalized academic skills that are culturally relevant, the ability to communicate, and the ability to interact in casual conversations.

Conclusion

The present chapter has shown that ESP has several definitions, it also tried to discriminate ESP from General English teaching. Moreover, it gave a definition to course design and highlighted the three major approaches to course design and their major steps. It had also considered the main issue in designing ESP courses in the department of biology at Kasdi Merbah University. To sum up, course design is not an easy task, to create an effective and efficient course the teacher has to apprehensively follow each step and collaborate with an expert field all this for the purpose of coping with the students' needs as well as their wants.

Introduction

The first step in designing an ESP course is to conduct a needs analysis. Needs analysis can be a vital asset for teachers of English for specific purposes to identify their learners' key requirements or needs and determine the areas in which they are lacking skills. This chapter aims at defining needs analysis and emphasizes its purposes and importance. It will also mention the approaches to needs analysis and the data collection methods and steps that should be highlighted while conducting the students' needs analysis.

2.1 Definition of needs analysis

It can be difficult for ESP researchers to agree on one definition for needs analysis. The main reason for this definitional problem is the combination of two essentially subjective terms "needs" and "analysis". According to John (1991) needs analysis is the very first step in a course design which ensures validity and relevancy for the other subsequent course design activities. Indeed, all the other steps in course design are closely related to needs analysis. Hutchinson and Waters (1987) define needs as necessities, wants, and lacks. Witkin and Alschuld (1995) identify needs analysis as a bunch of systematic procedures applied with the aim of identifying the priorities that will help in making decisions about the programs or the organizational improvement and implementing resources. According to West (1994) needs analysis is "Essentially a pragmatic activity focused on specific situations although grounded on general theories, such as the nature of languages and curriculum". The technique is described by the author as a "pragmatic activity" that tries to identify the needs of the students and develop an appropriate syllabus.

Brindley (1989) describes it as "The gap between what the learners' actual needs are and what should be taught to them."(p.56). As a result, needs can be defined as what learners will be expected to do with a foreign language in a target circumstance, as well as how learners will master the target language over the training term. A needs analysis is a crucial and fundamental stage that aids in the identification of the learners' needs, desires, and prerequisites. It also determines their language background and preferences to create successful course designs.

Even if various definitions were given by many researchers, they all seem to agree on the point that needs analysis is the cornerstone of ESP course design. We can therefore say that needs analysis is a vital process in ESP.

2.2 The importance of needs analysis

According to Burksaitiene (2008) needs analysis is the key to collecting an insider's view of the ESP situation, and the views of chosen learners are of utmost importance. Jordan (1997) has stated that "Needs analysis should be the starting point for devising syllabus, course materials and classroom activities." (p.22). Bower (1980) also indicates the importance of needs analysis in guiding the syllabus development as well as material selection. Indeed, it is a highly significant procedure that permits the teacher to design a course that matches the target learners, as well as design a suitable syllabus, select the right materials and develop suitable activities. Riddell (1991) has stated that "...Through it NA the course designer becomes equipped to match up the content of the program with the requirements of the student body (what learners need)" (p.75). He also pointed out the important role that NA has in syllabus and course design.

Moreover, Basturkmen (2006) has claimed that the task of identifying the needs of the learner and designing a course that fits those needs is the major role of the ESP teacher. Therefore, any ESP practitioner must closely examine and analyzes the target learners' purposes to be able to determine precisely the content that will be pertinent to fulfilling the target objectives. Long (2005) thinks that without needs analysis a course will lack the selective goals that are necessary to deliver content that will allow an effective outcome. He added any ESP course that is constructed with the neglect of needs analysis will often contain too much or too little instruction to meet the learners' needs.

Dudley-Evans and St John (1998, p125) have mentioned the following concepts that NA is meant to identify

1-Professional information about the learners: the tasks and activities learners are/will be using English for target situation analysis and objective needs.

2-Personal information about the learners: factors that may affect the way they learn such as previous learning experiences, cultural information, reasons for attending the course and expectations of it, attitude to English wants, means, and subjective needs.

3-English language information about the learner: what their current skills and language use present situation analysis.

4-The learners' lacks: the gap between present situation analysis and target situation analysis lacks.

5-Language learning information: effective ways of learning the skills and language-learning needs.

6-Professional communication information about learners: knowledge of how language and skills are used in the target situation.

7- What is wanted from the course.

8-Information about the environment: in which the course will be run means analysis of personal information about learners.

Furthermore, Cawley (2009) has stated that needs analysis can provide the ESP practitioner with the approaches that are to say the knowledge about educational approaches that may be the most effective, the awareness of the existing programs as well as the gaps in the available training in order to permit the efficient use of resources. The outcomes refer to the information about the current situation that can be used in order to document the outcomes. The potential demand for future programs and textbooks, and finally the credibility which indicates that the program is serving the target audience.

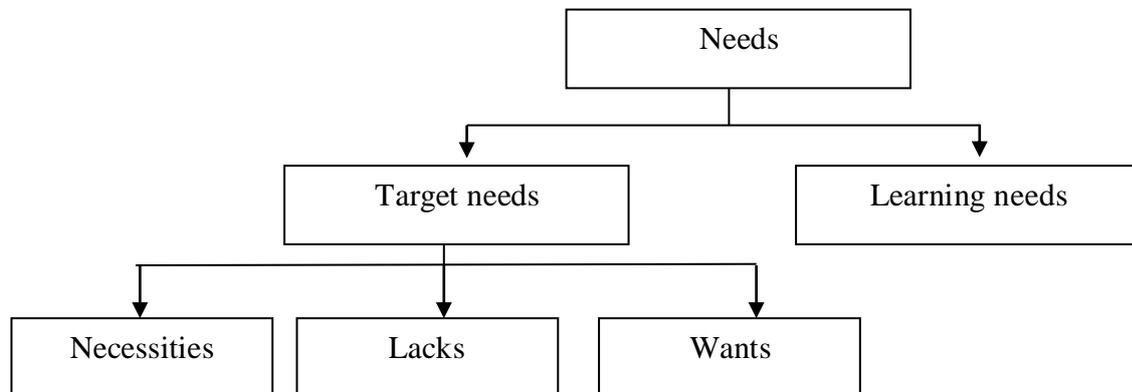
From all the above we can conclude that needs analysis is crucial for course design and it is the first step that will permit determining the appropriate objectives, content, and materials that will allow the learners to reach the intended outcomes.

2.3 Needs taxonomy

Hutchinson and Waters (1991) state that there are two kinds of needs: target needs and learning needs. The former implies what the learner needs to do in the target situation and the latter what he needs to do to learn, as illustrated in the figure below.

Figure 2.1

Classification of Needs Analysis adapted from Hutchinson & Waters (1987)



2.3.1 Target needs

According to Hutchinson and Waters (1987), target needs are mainly related to “What the learner needs to do in the target situation.”(p.54). To find an answer to this question, ESP practitioners should also gather information about learners’ necessities, lacks, and wants. Therefore, we can consider "Target needs" as an umbrella term, which in practice covers numerous important distinctions. It is more effective to consider the target situation in terms of necessities lacks, and wants.

2.3.1.1 Necessities

Necessities are the type of needs determined by the demands of the target situation; that is, what the learner has to know in order to function effectively in the target situation (Hutchinson and waters, 1992). In other words, necessities are the academic or occupational requirements of the target situation.

2.3.1.2 Lacks

Lack is the difference between the student’s present competence and the desire for competence (Allwright 1982, quoted in West, 1994). Hutchinson and Waters (1987) have stated that lacks are the gap between the existing proficiency and the target proficiency. Moreover, lack refers to what the learner already knows; so that the teacher or the facilitator can determine which of the necessities the learner lacks (Hutchinson, Waters, and Breen,

1979). It is highly constructive for an ESP course design to determine the necessities that the learner lacks.

2.3.1.3 Wants

The existence of need is directly linked to a person's perceptions and desires. Needs do not exist in reality. Therefore, they are a representation of personal feelings that learners express based on data relevant to their surroundings. As a result, wants are a mirror of the learners' own perceptions (Richterich, 1980). The wants are usually highly personal, which is why they are frequently referred to as "subjective". In fact, these wants are very real, and they may conflict with the employer's requirements. As a result, solutions must be created to accommodate them. Individual wants cannot be satisfied in this way; nevertheless, the wants of the majority can be addressed and partially accomplished.

According to Allwright (1982, quoted in West, 1994) wants are the skills and abilities that the learner consider to be relevant to himself or herself. The perspectives and desires of learners, as well as the reasons for incorporating this language into their specialty should be considered by ESP practitioners. In other words, it is critical to listen to and analyze learners' opinions and thoughts when constructing a course.

2.3.2 Learning needs

Hutchinson and Waters (1987) have claimed that "It is naive to base a course design simply on the target objectives." (p.61). Therefore evaluating the students' needs in the process of developing an ESP course relies not only on the target needs but also on the learning needs. Hutchinson and Waters (1987) added that the learning needs are what the learners need to do in order to learn and they have stated that "...It is naive to think that a journey can be planned solely in terms of starting point and the destination."(p.61). So we can consider the learning needs as a route between the starting point, which is the lacks, and the destination, which are the necessities. While the target situation might lead to a project in class in terms of general orientation, the exact content is a response to learning needs. The target situation alone is not a good indicator of what the ESP course will require. It can decide the final destination, but we must also choose our path: the learning situation's conditions, the learner's knowledge, skills techniques, and motivation.

ESP Course designers must examine the learner's learning requirements in light of their motivation, the learning context, and their prior knowledge and skills as Xiao (2007) has

stated that learning needs are “The factors that affect the learning like attitude, motivation, awareness, personality, learning styles and strategies, together with the social background.”(p.2). This can assist the teacher in transmitting appropriate knowledge to the students and clarifying the steps learners must take to meet their target needs, starting with recognizing their deficiencies.

2.4 Components of ESP need analysis

Various components of language needs analysis are used to examine several focuses and issues in language planning, development, teaching, and learning. Many ESP scholars suggest that TSA (Target Situation Analysis), LSA (Learning Situation Analysis), and PSA (Present Situation Analysis) are the most important factors to consider when assessing learners' language needs.

2.4.1 Target Situation Analysis

According to Hutchinson & Waters (1987), the target situation is the situation in which language learners will be using the language they are learning. West (1994) defined the Target Situation Analysis (TSA) as a form of needs analysis, which focuses on identifying the learners' language requirements in the occupational or academic setting. Robinson (1991) has stated “A needs analysis, which focuses on students' needs at the end of a language course, can be called a TSA.”(p.8). Therefore the TSA is any kind of Target Situation Analysis (TSA) is a kind of needs analysis that focuses on the needs of students towards the end of a language course. Dudley-Evans & St. John (1998) have claimed that “TSA refers to tasks and activities; learners are/will be using English for target situation”. (p.124). They state that TSA generally uses questionnaires as the instrument. Dudley-Evans and St. John (1998) also explain that “TSA includes objective, perceived and product-oriented needs.”(p.124). The objective and perceived needs are derived by outsiders from facts, from what is known and can be verified.

Munby is widely regarded by all the ESP practitioners as the first specialist to develop systematic and influential concepts concerning target situation analysis as Coleman (1988) illustrates: “Probably the most influential of all needs analysis procedures currently available is Munby's “communication needs processor”.”(p.105). Indeed, Munby (1978) developed the most well-known framework for TSA needs analysis. He established the well-known “Communication Needs Processor (CNP)”; which is a set of questions about key communication factors (topic, participants, medium, etc.). Munby's model's most helpful

aspect is its comprehensive data banks, such as micro-skills and attitudes, which can be utilized as evaluations for the resulting syllabus. He developed an instrument that would allow a needs analyst to create an accurate profile of a specific language learner.

2.4.2 Learning Situation Analysis

According to Dudley Evans & St Jhon (1998), Learning Situation Analysis refers to subjective, felt, and process-oriented needs. LSA also guides learners toward what they want to learn. They have also claimed that LSA applies effective ways of learning the skills and language, and the rationale behind the learners' desire to learn. They show that subjective and felt needs come from insiders and are related to cognitive and affective processes. As a result, "to feel confident" is a personal/felt desire (Dudley Evans & St Jhon, 1998). They also explain that process-oriented needs originate from the learning situation.

2.4.3 Present Situation Analysis

Dudley-Evans & St John (1998) stated "PSA shows the weakness and strength in language, skills, and learning experience." (p.125). Robinson (1991) points out that PSA aims to determine what the students are akin to at the start of their language course, by examining their strengths and weaknesses. As a result, can serve as the starting point of the course.

According to Songhori (2008), Richterich and Chancerel were the first who introduced PSA in the 1980s to serve numerous functions by supplying information from many sources. They formulate the broadest range of devices for establishing the PSA. They identified three basic sources of information: student information, language-teaching organizations, and user-institution information. Jordan (1997) in accordance with Richterich and Chancerel thinks that the sources of information in the needs analysis are: the students themselves, the academic institution, and the prospective employer. As a result, ESP practitioners must collect data on students' attitudes toward language teaching and learning using a variety of teaching approaches and levels of competence. In addition in order to obtain information on their relative levels of competence and resources Richterich and Chancerel (1980) also suggest that ESP practitioners must research the surrounding society and culture, specifically the attitude toward the English language and the learning and use of a foreign language. Robinson (1991) commented that PSA assists language teachers and ESP practitioners in identifying and understanding students' wants and needs, as well as exploring their strengths and weaknesses. Furthermore, according to Hyland (2006), PSA gives both objectives data such as the age,

competency, and prior learning experience, as well as subjective data such as the self-perceived needs, weaknesses, and strengths). As a result, PSA refers to determining a student's current level of proficiency, including any deficiencies, whereas TSA aims to determine what students must do in the target setting.

Robinson (1991) has stated that needs analysis should be viewed as a mixture of both TSA and PSA. In order to address the demands of learners and achieve the desired goals, Songhori (2008) asserts that effective needs analysis must integrate both TSA and PSA. Munby (1978) contends that PSA represents limits on the TSA. According to McDonough (1984), PSA involves 'basic variables,' which must be carefully examined before the TSA.

In practice, one is likely to look for information on both TSA and PSA at the same time. As a result, needs analysis can be thought of as a combination of TSA and PSA.

2.5 Needs analysis data collection methods

In order to meet the most needs of learners in the form of priorities, ESP course designers use a variety of data collection methods. Ibrahim (2017), stated "There is a common agreement on the variety of the methods used to collect data in NA."(p. 3). The quality of the data collected depends in large part on selecting appropriate data collection techniques. ESP course designers frequently employ data collecting methods to accurately assess the major objectives of learning a language, the target situation in which the language will be used, as well as the learners' needs and competencies.

Basturkmen (2010), Brown (1995, 2009), Long (2005), Hyland (2006), Richards (2001), Graves (1999), Dudley-Evans and St John (1998), and West (1997) agree that questionnaire, observations, interviews, and analysis of authentic spoken and written texts are tools that can be used to investigate

2.5.1 Questionnaires

One of the most used forms of needs analysis that most analysts choose to perform is the questionnaire mainly because, in comparison to any other process, it enables the researchers to collect information on a large scale (Macalister & Nation, 2004). A questionnaire is a set of questions that are distributed to a group of people. The goal is to collect data about their attitudes, thoughts, behaviours, and so forth (Simona,2012).

Some specific qualities must be followed in order for the questionnaire to be valid and relevant. According to Dörnyei (2003), the questionnaire should be no more than four pages long and take no more than 30 minutes to complete. The layout should be simple and organized, with the issue of anonymity addressed early on. Furthermore, the title should specify the "area of research," and the instructions should be both comprehensive and explicit so that respondents understand exactly what they must perform. According to Taylor Powell (1998), the questionnaire's content should include questions that will provide the most correct data to the analysis's conductor, i.e., data that will assist them to reach their original goal. In addition, the questions should be changed so that responders do not become bored. In order to acquire the desired information and to be understood by all respondents, simple and straightforward wording is also required (TaylorPowell, 1998).

According to Kumar (1996), questionnaires are easier to process, through the large possible number of respondents, and they can answer better and frankly, and are less time-consuming. Based on previous benefits, we have decided that questionnaires will be adequate as one of the quantitative collecting methods for our research. It will allow us to collect information on a large scale, as well as its easiness of administration. However, it also provides a broad view of the topic that is difficult to gain through other means of inquiry. Furthermore, bias is reduced, as well as time and effort.

2.5.2 Observation

Marshall and Rossman defined observation as "The systematic description of events, behaviours, and objects in the social setting chosen for study"(p.79). Observation usually involves watching an individual or a small number of individuals and recording the behaviours that occur, then analyzing the findings (Cohen, Manion, & Morrison, 2007). According to Long (2005) observation is the most naturalistic data that may be collected, but it is an extremely time-consuming method.

2.5.3 Interview

Interviews are the most common data collection technique to promote understanding and gathering the truth. Long (2005) has stated, "Use of interviews is widely reported in needs analyses in ESP." (p.37). According to Ibrahim (2017) interviews aim to ask open-ended questions and allow the collecting of private information from individuals. This can lead to

genuine points of view (Brown, 1995). Often audiotapes are utilized to allow for more consistent transcription (Creswell, 2012).

Interviews can be Structured, Unstructured, or Semi-structured. For the structured interview, the formulation, design, and objectives are similar to the questionnaire. “A structured interview is similar in format construction and purpose to a questionnaire.”(Mackay, 1978, p. 22). The distinction is that the person collecting the data asks the questions directly to the interviewee and then records the answers. Unstructured interviews are informal conversational interviews in which respondents may not even know they are being interviewed (Patton, 2002). Unstructured interviews do not rely on a list of predetermined questions. Instead, interviewers adopt what Patton refers to as a “Go with the flow” conversation style defined by their role in the field setting. The semi-structured interview is an exploratory interview used most often in the social sciences for qualitative research purposes or to gather clinical data. While it generally follows a guide or protocol that is devised prior to the interview and is focused on a core topic to provide a general structure, the semi-structured interview also allows for discovery, with space to follow topical trajectories as the conversation unfolds.

However, interviews are considered time-consuming. There should be a time limit for the interview and it should be recorded to allow the interviewer to get the suitable information (Dudley- Evans and St John, 1998).

2.5.4 Analyzing authentic texts

Analyzing authentic texts is one method of NA. Analyzing textual texts, as well as audio and video recordings of lectures, meetings, and classroom activities, is part of the process. It provides information about the target circumstance by identifying the situation's linguistic features (Dudley-Evans & St John, 1998). Authentic texts may exist inside or outside the program site, according to Brown (1995). Examining past evaluations of students is an example of information found inside a program, whereas performing a literature study is an example of information acquired outside. If learners use the language primarily for reading and writing, text analysis can help them figure out what they should read and write (Dudley-Evans & St John, 1998).

2.6 Steps in conducting needs analysis

A variety of processes can be employed to conduct a requirements analysis, and the type of procedures chosen impacts the information obtained.

Gravatt, Richards, and Lewis (1997,) state the following procedures; first, a thorough examination of a wide range of survey questionnaires is required. Then, in order to receive some benefit from their questionnaires, teachers make contact with others who have performed comparable surveys. Interviewing teachers is also a necessary stage in determining goals. Following that, it is critical to identify the participating department. In addition, practitioners can discuss their questionnaires with other peers in an effort to share information. The next step is to administer the questionnaire. They then devised a data collection schedule. Finally, they tabulate the responses.

Schutz and Derwing (1981) provided eight steps for conducting a needs analysis. These steps are as follows: specifying the purpose, which entails properly identifying the study's objectives in order to attain the desired outcomes, delimiting the target population in order to make practical decisions about the monetary, position, and time considerations, and defining research parameters entails outlining the study's limitations in order to improve its efficacy, selecting information gather instrument which depends on the conditions, scope and objectives of the study, collecting data, analyzing the results. The researcher can use either computer-assisted analysis tools or observations and interpretations to analyze the results. When compared to observations and interpretations, which need lengthy interaction with the target situation and qualitative interpretations of the data, using computer-assisted analytical tools to evaluate data is more reasonable in terms of time and effort, interpreting the results where the researcher explores what she or he had derived from the process of data interpretation, and finally criticizing the project which includes drawing out implications for further studies and explains the limitations of the study.

Conclusion

Need analysis is a complex process, involving much more than simply looking at what the learners will have to do in the target situation. In this chapter, we have seen how different scholars have defined needs analysis and how the majority of them agree that it is the cornerstone of ESP course design. We have also seen the purposes and importance of needs analysis. Most of all, we have tried to stress that both target situation needs and learning needs

must be taken into account. We have seen the different approaches to needs analysis and come to the conclusion that effective needs analysis must integrate both Target Situation Analysis and Present Situation Analysis. We have also mentioned the importance of choosing the adequate tools in order to gather information and that the quality of the data collected depends in large part on selecting appropriate data collection, and finally, we have mentioned some procedures to follow in order to conduct a needs analysis.

Introduction

After reviewing the literature on ESP course design and needs analysis. This chapter is devoted to analyzing, investigating, and interpreting the results which emerged from both the students' questionnaire and the semi-structured teachers' interview for the purpose of designing a course that match the students needs.

3.1 Methodology

The following research follows the descriptive method since it aims to describe the correlation between two variables; an independent variable which is the needs of the third year- Biochemistry students at Kasdi Merbah University Ouargla, and a dependent variable which is the course design. According to Marczyk et al (2005), the descriptive method refers to "The process of defining, classifying, or categorizing phenomena of interest."(p.16). It is the most appropriate method to collect quantitative and qualitative data and the most adequate to obtain an overall idea of the current investigation which attempts to probe into students' needs.

The present research follows the mixed methods research design since it involves the integration of both qualitative and quantitative research and data. While the former defines, the latter describes. Mixed method may be defined as research in which the investigator collects and analyses data, integrates the findings, and draws inferences using both qualitative and quantitative approaches and methods in a single study (Tashakkori and Creswell, 2007). Mixed method is the most adequate research design for our study because collecting diverse types of data will provide a more complete understanding of the needs of third-year Biochemistry students. Jick (1979) claimed that all methods have biases and weaknesses and that the collection of both quantitative and qualitative data neutralized the weaknesses of each form of data.

3.2 Participants

After selecting the appropriate method to use in our study, we mention the participants. The first type of participants is represented by all the students of third-year Biochemistry students. Pilot and Hungler (1999), refer to the population as an aggregate or totality of all objects, subjects, or members that conform to a set of specifications. In this study, the population consisted of an existent population because it is represented by 50 concrete individuals which represent the total number of third-year biochemists students.

The second type of participants who took part in this study consisted of one English language teacher and two subject specialists who had already taught in the department of Biology at Kasdi Merbah University Ouargla.

3.3 Data collection instruments

In this research, we adopted two data collection tools, a questionnaire for third-year Biochemistry students to investigate their needs, as well as a semi-structured interview for English teachers at the department of biology to look into the process and methods used in the ESP course.

3.3.1 Description of the Questionnaire

In this study, we have used a structured questionnaire with precoded questions and well-defined skipping patterns to follow the sequence of questions. The questionnaires comprise three sections. Section one covers general background information. Section two is concerned with English language proficiency, and section three regards teaching methodology and classroom management. It is administered to (50) students who represent the population of third-year Biochemistry students.

3.3.2 Description of the Semi-Structured interview

In the teachers' semi-structured interview as described by Bryman (2001), the interviewer has a series of questions that are in the general form of an interview schedule but can carry the sequence of questions. The open-ended questions are used to gain rich and detailed descriptions of the phenomenon being studied. The semi-structured interview consisted of three perceptions of their sections. The first section aimed to collect general background information. The second section was intended to collect information about the teaching methodology used by the teachers, and the third section was developed to identify the teachers' students.

3.4 Data analysis and discussion

This section accounts for the findings of the current study's data analysis. These devices were used to collect information for the study's findings. The objectives of the analysis are to build ESP course that will help learners enhance their English language skills and to provide linguistic support to teachers in that department. Excel Windows 7 was used to analyze the data quantitatively and qualitatively.

3.4.1 Students' questionnaire analysis

Section 1: General Background information

Question 01: What is your Gender?

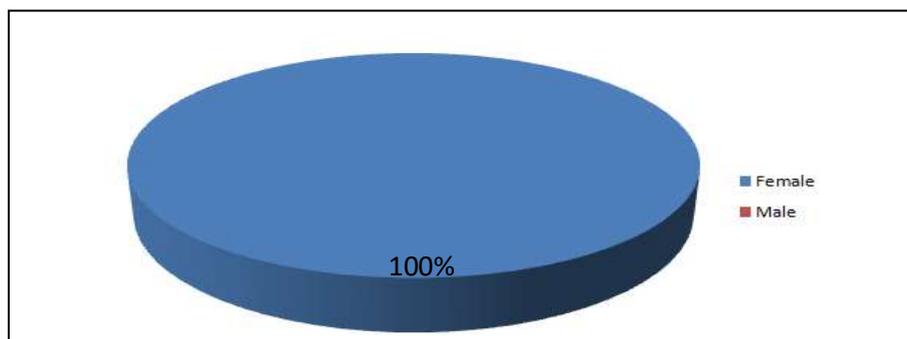
Table 3.1

The gender of the informants

Group	N	Percentage
Female	50	100%
Male	0	0%
Total number of informants 50		

Pie Chart 3.1

Gender of the informants



As shown in Table 3.1, all informants were females.

Question2: How old are you?

Table 3.2*Age of the informants*

Group	N	Percentage
20-30 years	50	100%
More than 30	0	0%
Total number of informants	50	

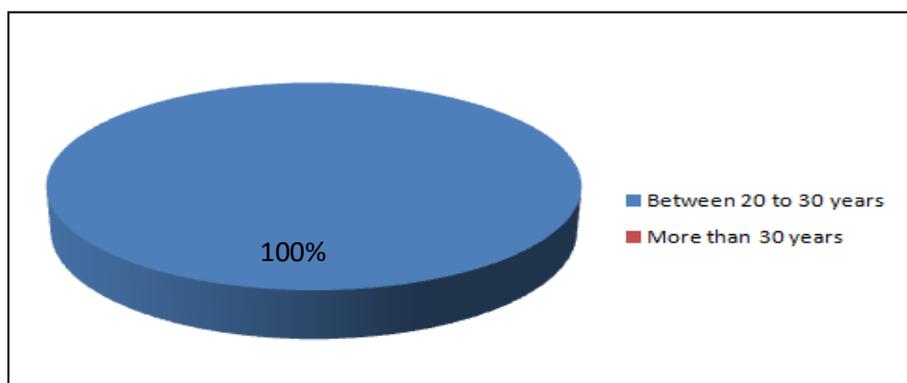
Pie Chart 3.2*Age of the informants*

Table 3.2 indicates that all the informants were aged between 20 and 30 years. Therefore, the participants are adult learners, which are considered one of the most important characteristics of ESP class, since adult learners are self-directed.

Question3: What was your grade in English in the Baccalaureate examination?

Table 3.3*Students' grades in the baccalaureate examination*

Group	N	Percentage
Below 10	24	48%
Above 10	26	52%
Total number of informants	50	

Pie Chart 3.3

Students' grades in the baccalaureate examination

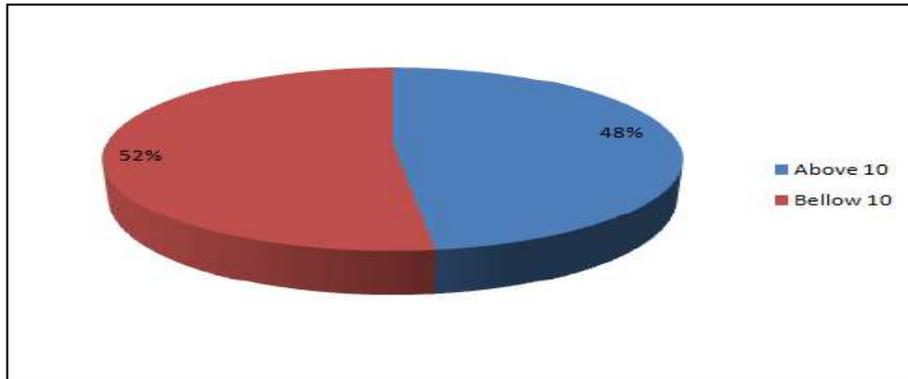


Table 3.3 shows that the number of informants who got an average below 10 in the baccalaureate examination is (48%), and the informants who got an average above 10 in the baccalaureate examination are (52%).

Question 4: Do you consider English important for your studies?

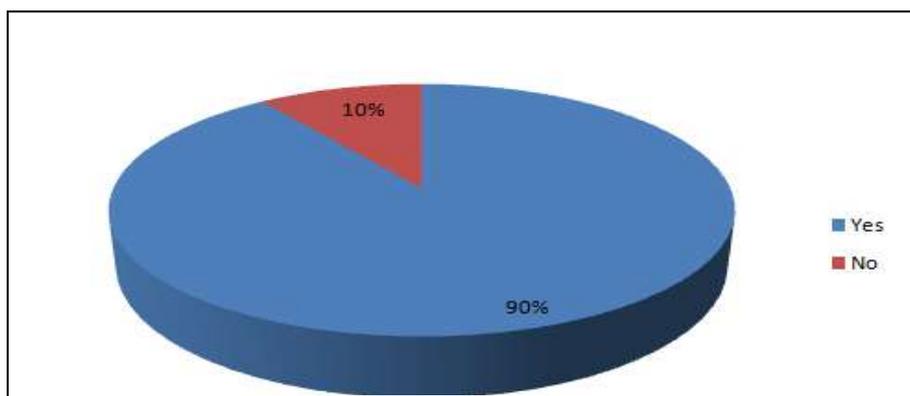
Table 3.4

The importance of English in student' University studies

Options	N	Percentage
Yes	45	90%
No	05	10%
Total number of informants 50		

Pie Chart 3.4

The importance of English in students' University studies



As shown in table 3.4, the majority of the students (90%) consider English important for their studies. But only (10%) think English is not important. Since the majority answered "Yes", it can be concluded that English is important for third-year Biochemistry students and that they are aware of this. Kennedy and Bolitho (1984) mentioned in this regard "Much of the demand for ESP has come from scientists and technologists who need to learn English for a number of purposes connected with their specialism."(p.6)

Question 5: Do you think English will benefit you in your future career?

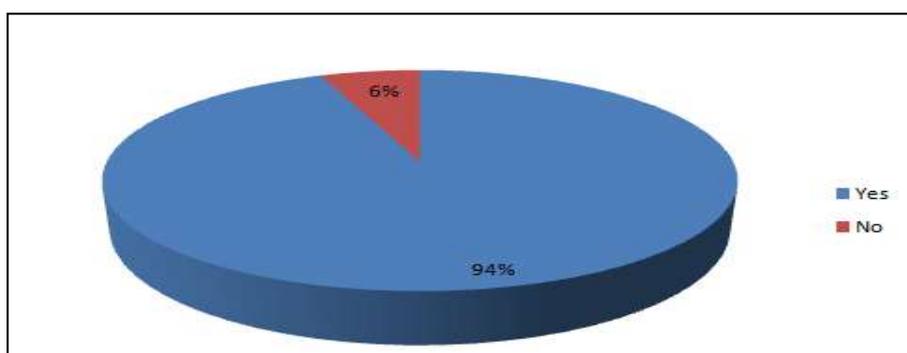
Table 3.5

The importance of English in students' future career

Group	N	Percentage
Yes	47	94%
No	03	06%
Total number of informants 50		

Pie Chart 3.5

The importance of English in students' future career



From this table, it is clearly remarked that almost all the students (94%) think that English will benefit them in their future careers and only (6 %) answered "No".

Question 6: Have you taken any prior General English training courses other than what you have received during your curriculum in middle and secondary course?

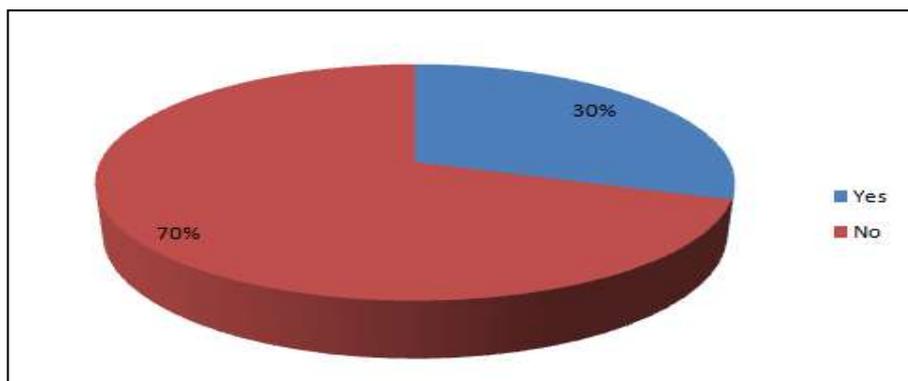
Table 3.6

Students' general English background

Options	N	Percentage
Yes	15	30%
No	35	70%
Total number of informants 50		

Pie Chart 3.6

Students' general English background



The table above shows that the majority of the participants (70%) did not take any prior general English training course and only (30%) mentioned that they have taken a prior general course. Respondents who answered “Yes” were asked to indicate where. Of the (15) who answered yes, (12) provided an answer. (75%) stated that they were enrolled in a program in private schools and (25%) mentioned that they were studying by themselves.

Section 2: English Language Proficiency

Question 1: Have you received any English for Science courses in your studies?**Table 3.7***Students' English for science background*

Options	N	percentage
Yes	14	28%
No	36	72%
total number of informants 50		

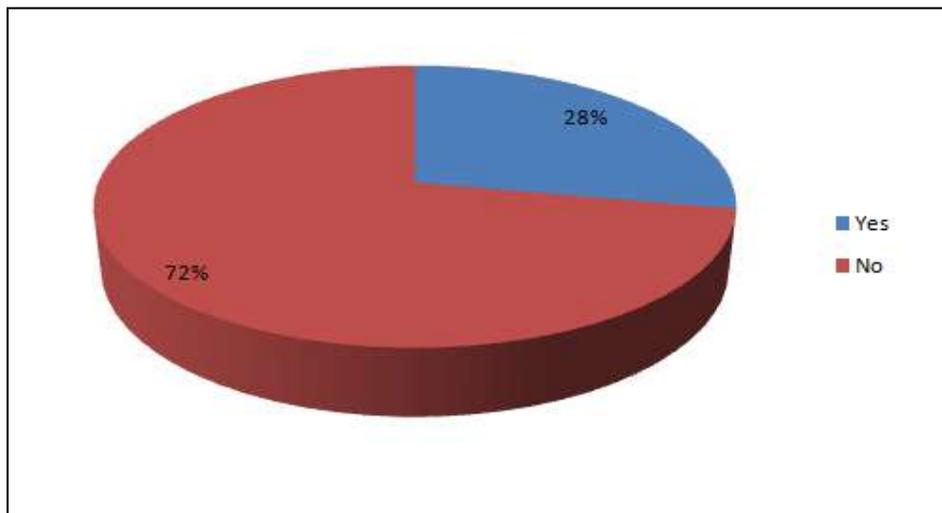
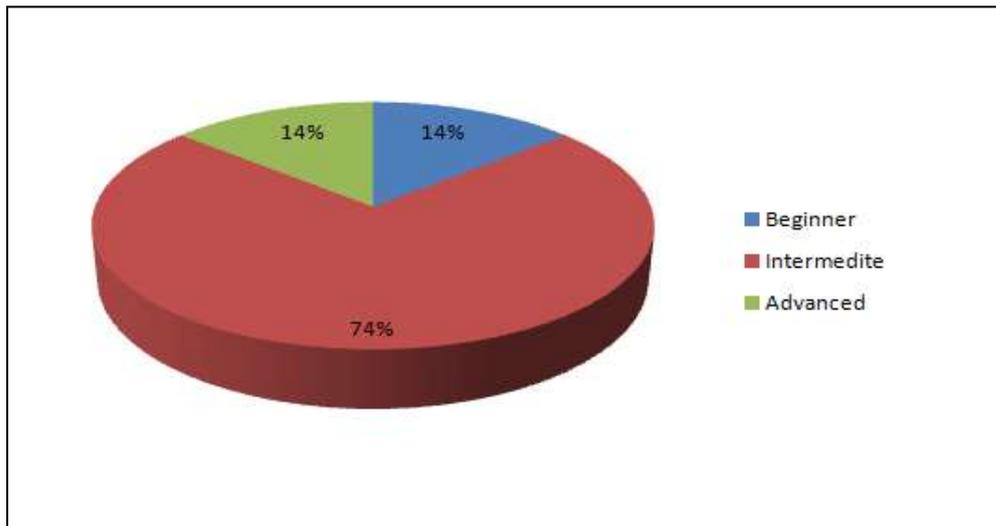
Pie Chart 3.7*Students' English for science background*

Table 3.7 shows that the majority of the students (72%) have never received any English for sciences courses in their studies and only (28%) mentioned that they had received English for science courses. Respondents who answered “Yes” were asked to indicate how. Of the 14 who answered yes, only 03 have provided an answer; two of them have mentioned that they had a module where they were asked to conduct research for studies in English, and one mentioned that she studied the module in the first year of her studies at the University.

Question 2: How would you assess your English level?**Table 3.8***Self-evaluation of the student's level in English*

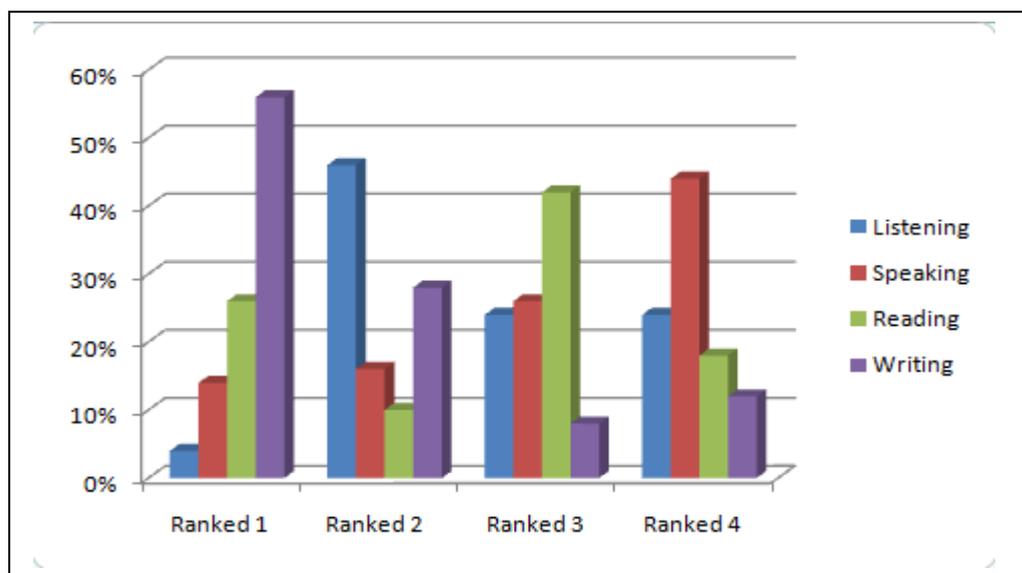
Options	N	Percentage
Beginner	7	14%
Intermediate	37	74%
Advanced	6	12%
Total number of informants	50	

Pie Chart 3.8*Self-evaluation of the student's level in English*

This question was asked to involve students in self-evaluation of their performance in English language. As shown in the table, (74%) of informants said that they have an intermediate level, while (14%) answered that they have a beginner level and only (12%) claimed that they have an advanced level.

Question 3: Rank the four English skills from the most difficult to the easiest**Table 3.9***Students' ranking of the four English skills*

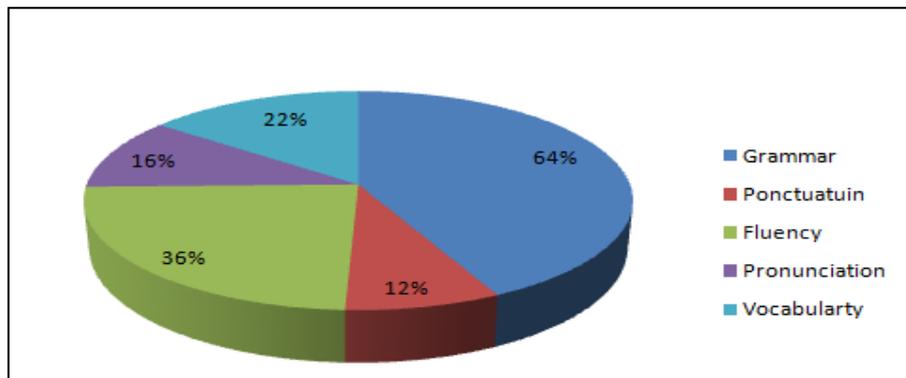
	Ranked 1	Ranked 2	Ranked 3	Ranked 4
Language skills	1	2	3	4
Listening				
Count	2	7	13	28
Percentage	4%	14%	26%	56%
Speaking				
Count	23	8	05	14
Percentage	46%	16%	10%	28%
Reading				
Count	12	13	21	4
Percentage	24%	26%	42%	8%
Writing				
Count	12	22	9	6
percentage	24%	44%	18%	12%
Total number of informants	50			

Bar Graph 3.1*Students' ranking of the four English skills*

The table above represents respondents' self-assessment of the difficulty and easiness of the four language skills. Several students perceived speaking and writing as the most difficult skills. Whereas listening and reading skills were rated at low levels.

Question 4: What aspects of English do you find most challenging?**Table 3.10***Students' weaknesses in English language*

Options	N	Percentage
Grammar	32	64%
Punctuation	6	12%
Fluency	18	36%
Pronunciation	8	16%
Vocabulary	11	22%
Total number of informants	50	

Pie Chart 3.9*Students' weaknesses in English language*

As depicted above, the majority of the students (64%) find grammar as the most challenging aspect of English. Others regard fluency and vocabulary as the most challenging aspects of English, and a minority considers punctuation and pronunciation as the most challenging aspects.

Question 5: why do you want to study English?**Table 3.11***Students' objectives for studying English*

Objectives	N	percentage
To Take part in an oral discussion in English	32	64%
To understand lectures	19	38%
To read and translate	20	40%
To get a diploma	06	12%

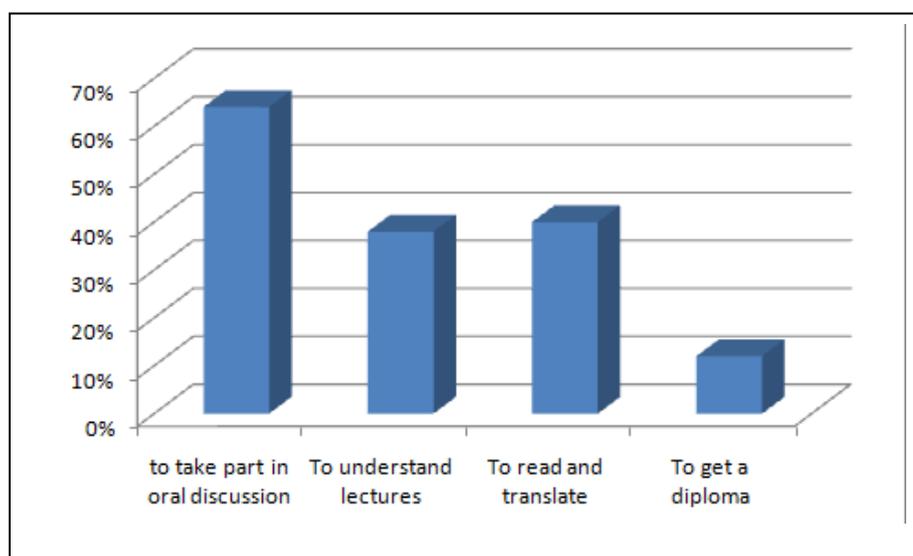
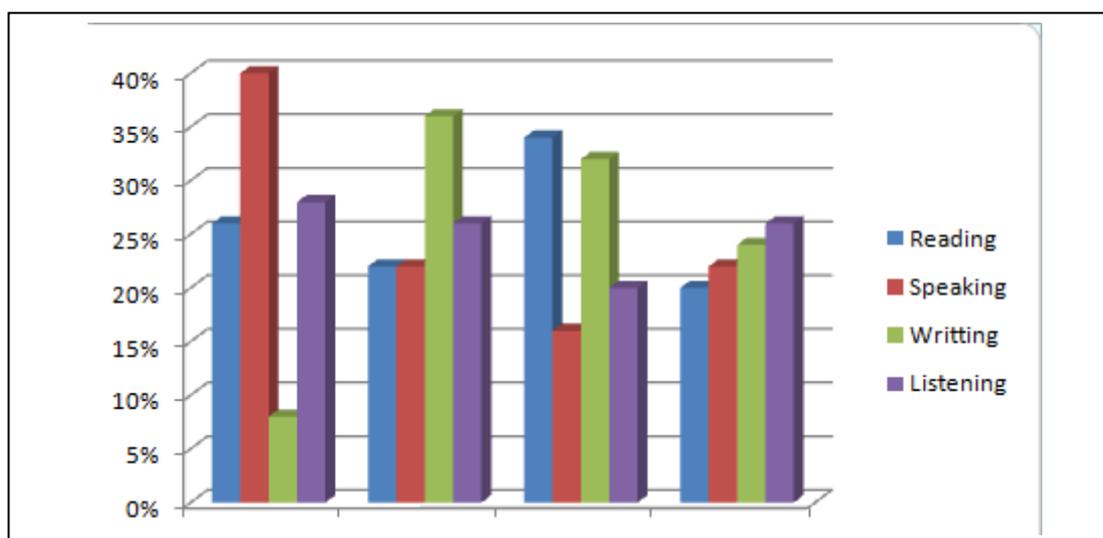
Total number of informants 50**Bar Graph 3.2***Students' objectives for studying English*

Table 3.11 presents the purposes of studying English for third-year biochemist students. (64%) of the respondents want to study English in order to take part in oral discussions; (38%) to understand lectures. (40%) to read and translate. And only (12%) to get a diploma. Two students mentioned that they wanted to learn English to travel and two others to communicate with native speakers.

Question 6: Classify the four skills according to what you need**Table 3.12***Students' evaluation of the most important English language skills*

	Rank 1	Rank 2	Rank 3	Rank 4
Reading				
Count	13	11	17	10
Percentage	26%	22%	34%	20%
Speaking				
Count	20	11	8	11
Percentage	40%	22%	16%	22%
Writing				
Count	4	18	16	12
Percentage	8%	36%	32%	24%
Listening				
Count	14	13	10	13
Percentage	28%	26%	20%	26%
Total number of informants	50			

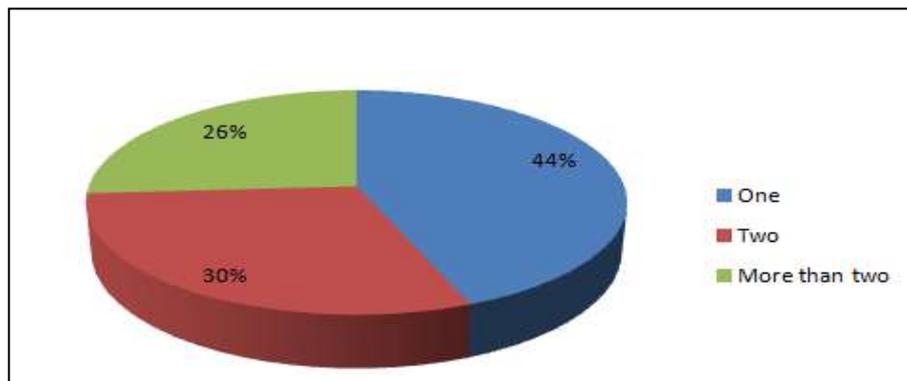
Bar Graph 3.3*Students' evaluation of the most important English language skills*

As shown in the previous table, speaking and writing are considered fundamental skills according to third-year biochemist students.

Section 3: Teaching methodology and classroom management

Question 1: How many sessions would you prefer to have per week?**Table 3.13***Students preferred number of sessions*

Options	N	Percentage
One	22	44%
Two	15	30%
More than two	13	26%
Total number of informants 50		

Pie Chart 3.10*Students preferred number of sessions*

As illustrated above, the majority of students (44%) opted for one hour per week. As a matter of fact, time is a crucial factor that must be taken into account when conducting an ESP course.

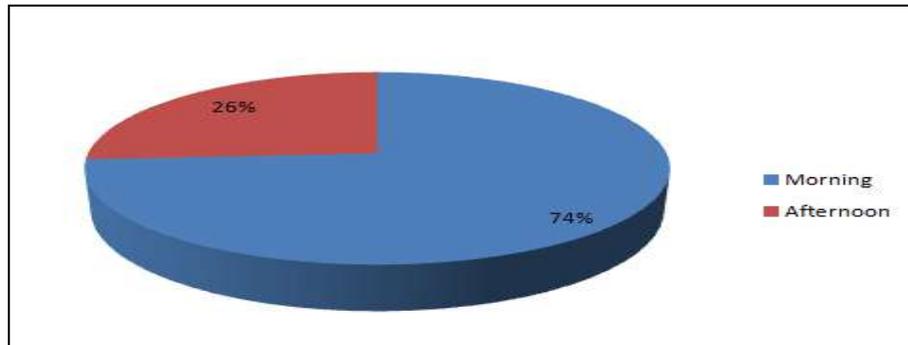
Question 2: Do you prefer to study in the morning or in the afternoon?**Table 3.14***Student' preferred time of studying*

Options	N	Percentage
Morning	37	74%

Afternoon	13	26%
Total number of informants 50		

Pie Chart 3.11

Students' preferred time of studying



It can be noticed from Table 14 that the majority of respondents mentioned that studying in the morning was more suitable, whereas only (13%) opted for studying in the afternoon.

Question 3: Are you willing to study on the weekends?

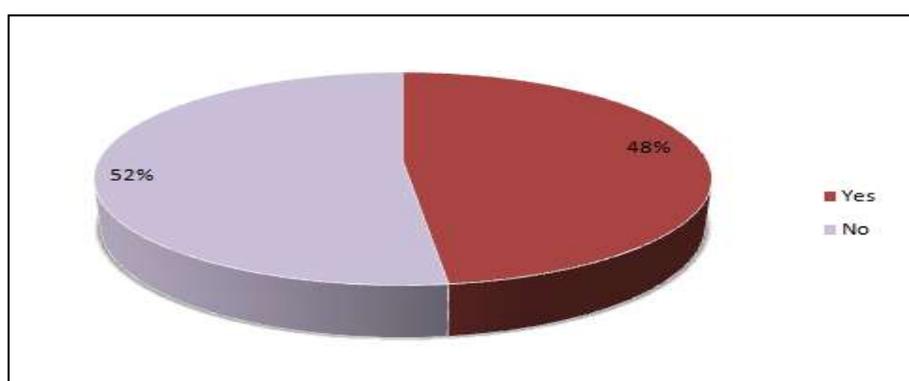
Table 3.15

Students' willingness to study on weekends

Options	N	Percentage
Yes	24	48%
No	26	52%
Total number of informants 50		

Pie Chart 3.12

Students' willingness to study on weekends



As shown in the above-mentioned table, (52%) of the respondents answered “No”. Whereas (48 %) of the respondents answered “Yes”.

Question 4: How do you prefer to study?

Table 3.16

Students' preferred ways of studying

Options	N	Percentage
Face-to-face	36	72%
Via Zoom meetings	4	8%
Both	10	20%
Total number of informants 50		

Bar Graph 3.4

Students' preferred ways of studying

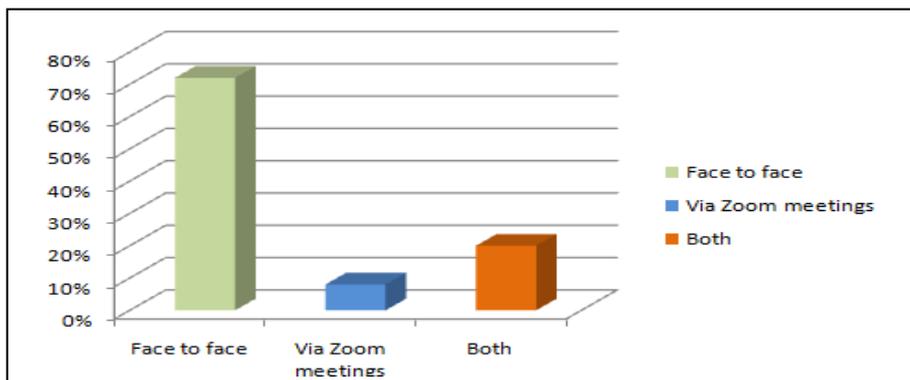


Table 3.16 reveals that a huge proportion of students (72%) preferred face-to-face studying. While only (8%) opted for studying via Zoom meetings and (20%) regards both as suitable.

Question 5: How do you prefer to study in class?

Table 3.17*Preference for classroom interaction*

Options	N	Percentage
Individually	17	34%
In small groups	27	54%
In pairs	3	6%
All	1	2%
Total number of informants 50		

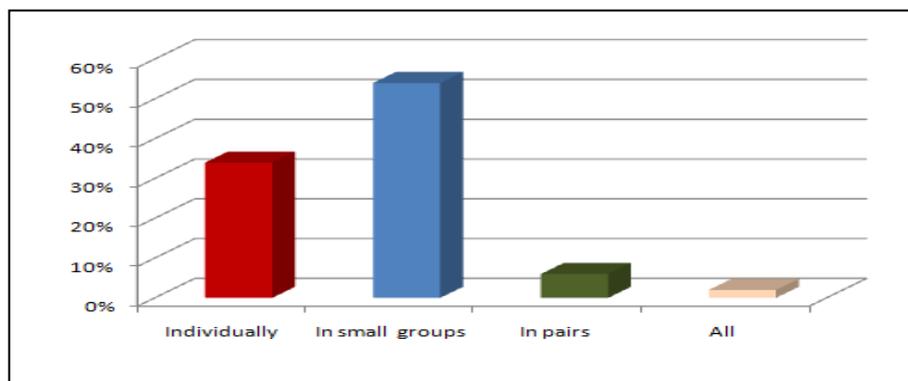
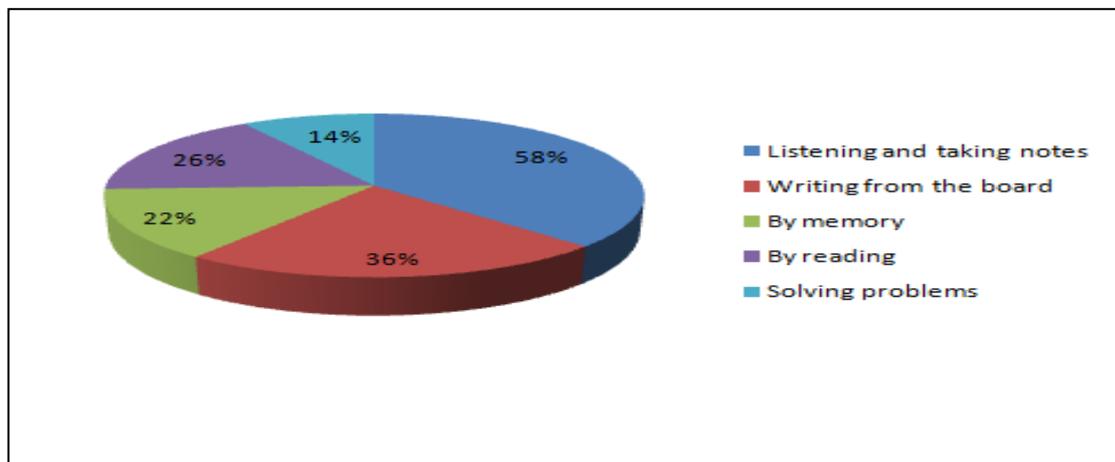
Bar Graph 3.5*Preference for classroom interaction*

Table 3.17 inquires into the preference for classroom interaction patterns. The majority of the respondents (54%) mentioned that they preferred group work interaction patterns, and (34%) preferred individual work.

Question 6: How do you prefer to learn?

Table 3.18*Students' preferred ways of learning*

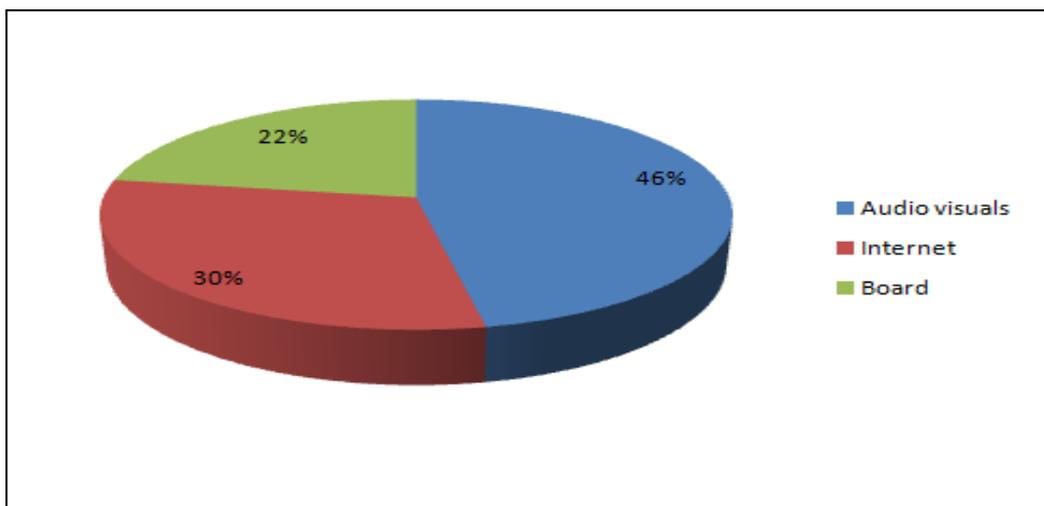
Options	N	Percentage
Listening and taking notes	29	58%
Writing from the board	18	36%
By memory	11	22%
By reading	13	26%
Solving problems	7	14%
Total number of informants	50	

Pie Chart 3.13*Students' preferred ways of learning*

The results above elicited that most of the students with (58%) of informants are more interested in getting information by listening to the teacher and taking notes. (36%) preferred copying from the board. (26%) by reading; (22%) by memory. Whereas only (14%) by solving problems.

Question 7: What material do you prefer to use while studying?**Table 3.19***Students' preferred teaching materials*

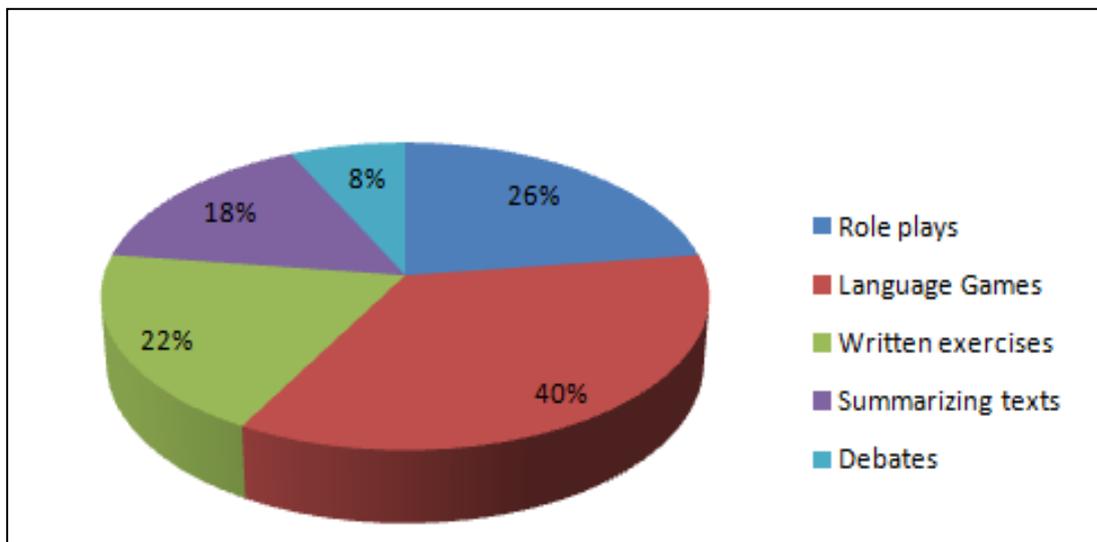
Options	N	Percentage
Audiovisuals	23	46%
Internet	15	30%
Board	11	22%

Pie Chart 3.14*Students' preferred teaching materials*

The table above shows that a high number of students (46%) see audiovisuals as a suitable material for their specialty others (30%) regard the internet. However, a low number of students consider board as their preferred material for learning.

Question 8: Which of the Activities would you prefer?**Table 3.20***Students' preferred activities*

Options	N	percentage
Role-plays	13	26%
Language Games	20	40%
Written exercises	11	22%
Summarizing texts	09	18%
Debates	04	8%
Total number of informants 50		

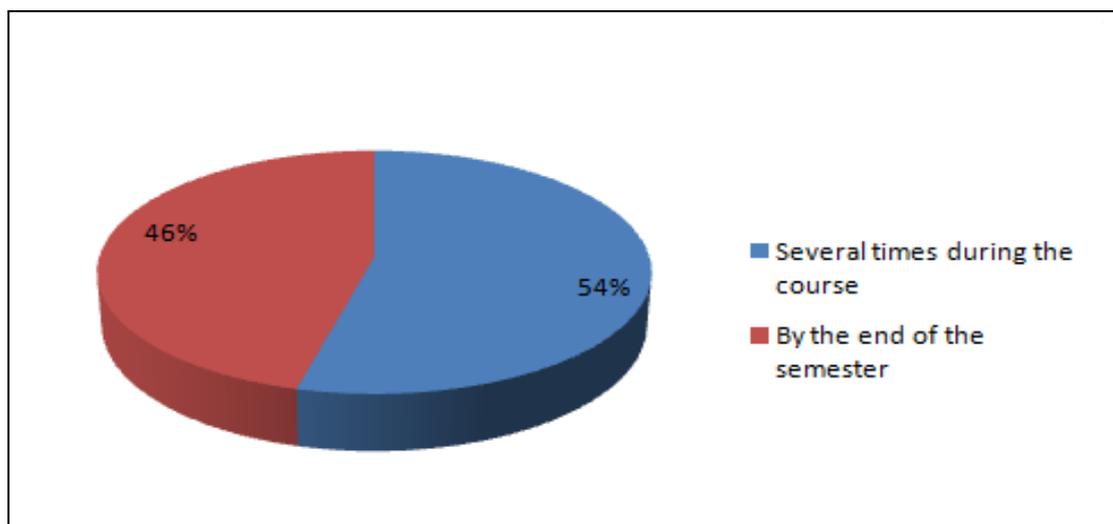
Pie Chart 3.15*Students' preferred activities*

According to the above results, the majority of third-year biochemist students prefer language games, other regards role play. However, a few of the respondents preferred written exercises, summarizing texts, and debates.

Question 9: How frequently do you want to be assessed?

Table 3.21*Students' preferred frequency of assessment*

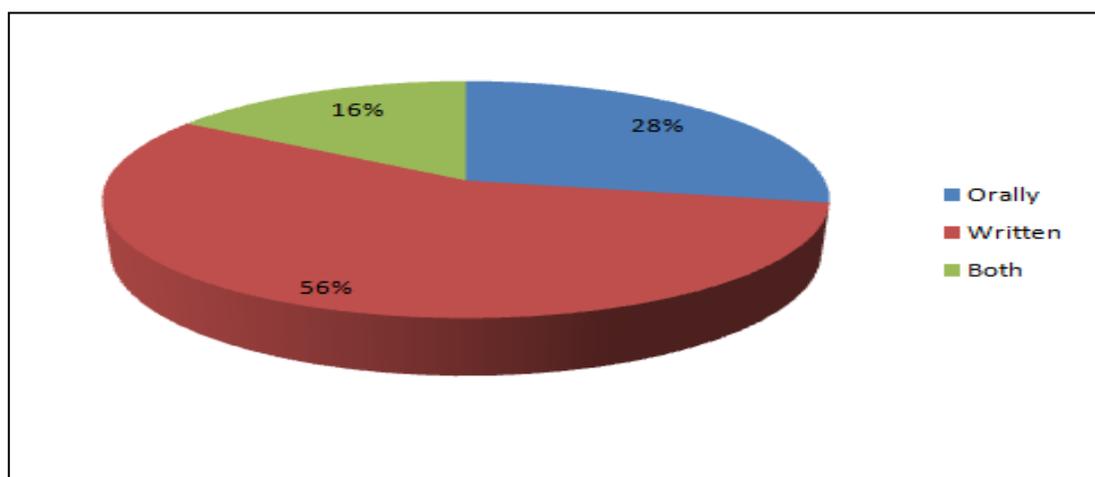
Options	N	percentage
Several times during the course	27	54%
By the end of the semester	23	46%
Total number of informants 50		

Pie Chart 3.15*Students' preferred frequency of assessment*

As shown above, (54%) of the informants prefer a formative assessment. Whereas (46%) of the students mentioned that a summative assessment is most suitable. Both are important because each one has specific aims. Summative assessment is to evaluate students learning and teachers teaching after a teaching period. (Anthony. J & Susan. M, 2005). Whereas formative assessment is the investigation, evaluation, and analysis of records of daily students' learning activities (Bloom et al; 1971).

Question 10: How do you want to be assessed?**Table 3.22***Students' preferred way of assessment*

Options	N	Percentage
Orally	14	28%
Written	28	56%
Both	16	16%
Total number of informants 50		

Pie Chart 3.16*Students' preferred way of assessment*

As shown in the above-mentioned table (56%) of the students view written assessment as more suitable for them. Whereas only (28%) chose oral assessment.

3.4.2 Students' questionnaire results discussion

After the analysis of the students' questionnaire, the following results were reached. The sample population is third-year Biochemistry students, the students were aged between 20 to 30 years, and all the informants were females. All this led us to conclude that the students are adult learners and field specialists since they have studied Biology for three years. The fact that the students are adult learners means that they are self-directed which is

one of the characteristics of course design according to Carvey and Dudley-Evans and St John(1997) adult learners are self-directed and, therefore need to use what they have learned in the future.

The majority of the respondent (74%) consider themselves to have an intermediate level in English, the grades of English in the Baccalaureate examination are almost equal between above 10 and below 10, but this does not reflect the level of the students since it focuses more on evaluating the writing skill neglecting speaking, listening, and reading. It had also been noticed that besides studying English at school the majority of the respondents did not have any general English background, and even though they are in their last year of the first cycle of LMD, the majority do not have any English for science background due to the absence of language teachers in the department.

The majority of third-year Biochemistry students considered English important in their studies and that they are aware of it. Kennedy and Bolitho (1984) mentioned in this regard "Much of the demand for ESP has come from scientists and technologists who need to learn English for a number of purposes connected with their specialism."(p.6). They also considered English important for their future career mainly because of the jobs opportunities in privates companies' laboratories, as well as studying abroad or for their future research. This can be used as a motivational source. According to Gardner and Lambert (1972), learners with instrumental motivation want to learn language because of a practical reason such as getting a job, enhancing their career possibilities.

A high rate of respondents have considered writing and speaking as the most difficult skills at the same time the majority also considered writing and speaking as their highest priorities for improvement, as for them it is the two most important skills. The students also find grammar and fluency as the most challenging aspect of language we can consider these results as an affirmation of their most difficult skills since they displayed a negative attitude toward their English competence in speaking and low self-esteem in their writing abilities. The majority of the students want to learn English mainly to take part in oral discussion as well as read and translate, and the majority want to learn by listening, and taking notes and writing from the board. This goes in correlation with the students' ranking of the fours skills where they have mentioned listening as the easiest skill this can represent an ability to the learning process, concerning students' proffered teaching materials to be used in the

classroom, the majority have selected audio-visual, and concerning their preferred activities to learn the majority opted for roles plays and languages games.

Moreover, respondents preferred to study one session per week because they have a full schedule, as a matter of fact, time is a crucial factor that must be taken into consideration when designing an ESP course. Robinson (2006) stated "ESP courses are normally constrained by a shortage of time."(p.398). There is generally a limited period of time by the end of which students must have sufficient English to perform their work or study tasks we can manage this constraint by using Flipped classroom. Students showed motivation since a high number were willing to study on weekends.

Furthermore, from the question 05 we can clearly notice that the majority of third-year Biochemistry students preferred group works interaction pattern, a tendency in preferring group work will permit to maximize the classroom activity, save time and allow more interaction and peer assessment, and most importantly to use a CLT framework approach which is the most appropriate method in ESP teaching context. Chenyiic (2010) stated that in ESP communicative goals are of a great concern since ESP is concerned with the communicative approach, and the majority preferred a face to face studying.

Finally, the majority of the respondents opted for a formative assessment, by doing this ongoing process both teachers and learners can know every weaknesses and strengths. The others opted for a summative assessment both are important because each one serves a specific purpose. Summative assessment is to evaluate students learning and teachers teaching after a teaching period (Anthony. j and Susan, 2005). Whereas a formative assessment is the investigation, evaluation, and analysis of the records of the daily students' learning activities (Bloom et al, 1971). Most of the students choosed written assessment. This may be because writing assessment has been usually used as a method of evaluation since the beginning of their academic path. Therefore they feel more at ease and more used to this type of assessment. It is important to know the preference of students' assessment methods as Dudely Evans and St.Jhon (1987) has stated the value of a test is mostly determined by how it is used. First and foremost, teachers and students require a positive attitude toward testing. So asking for the way they want to be assessed will strengthen this positive attitude.

3.4.3 The semi-structured teachers' interview analysis

Section A: Background information

Question 1: what is your gender?

All the teachers are females.

Question 2: Are you an English language teacher or a Biochemistry specialist?

Teacher one is an English teacher at Kasdi Merbah University Ouargla. The second and third teachers are biology specialists.

Question 3: How long have you been teaching English at the Department of Biology?

The first and second teacher mentioned that they have taught for two years. The third interviewee mentioned that she had taught for five years.

Question 4: Have you taught in other departments? If yes which department

The first teacher indicated that she taught in other departments, she mentioned that she taught in the Economics Department, the Physics Department, and the Psychology department. While the second and third teachers stated that they only taught in the Biology department.

Question 5: Have you had some training in ESP teaching?

The first teacher mentioned that she had some training in ESP teaching. Whereas the second and third teachers had no training in ESP teaching.

- If no, do you think you need it? Why?

Both teachers stated that they needed some training in ESP teaching. The second teachers justified her answer by explaining that (90%) of the documentation related to new findings in Biology is in English, but that their formation is mainly in Arabic or French. She stated that "This is a limitation for both my students and me in developing our knowledge." The third teacher aforementioned that she needs ESP training because there is a considerable difference between the knowledge you have and how to transmit it to your students (linguistics or specialty knowledge) and that at least they need to study the target learners, and teaching needs and methodology.

- If yes, please specify how?

The teacher number one had an ESP teaching training with the World Learning Algeria US Embassy. The training consisted of blending learning, that is to say, face-to-face and online training that ended up with a conference.

Section B: Teaching Methodology**Question 1: Is there any official syllabus or textbook for the third-year Biochemistry students?**

All the teachers aforesaid that there is no official syllabus or textbook.

Question 2: Do you ask your students about the objectives they want to achieve?

Two of the teachers asserted that they ask their students about the objectives they want to achieve .while one declared that she do not ask her students about their objectives of learning English and she justified her answer by mentioning that she did not feel the need to do so because they already have fixed objectives (CANVA) from the Ministry of Higher Education.

Question 3: What will the course be used for?

Teacher, number one, explained that the course will be used for reinforcing the use of English in a particular context with the selection of aspects of languages in specialized texts to be taught. While teacher number two, mentioned that the course will mainly be used to translate articles and abstracts. Whereas the teacher three explained that the students need to be able to understand articles in English because they will use them later on in their research.

Question 4: What is the approach you adopt in course design? Why have you chosen it?

The first teacher opted for an amalgamation of both a skills-based approach and a learning-based approach simply because teaching specialties through texts means teaching and enhancing skills and focusing on the learner. The second teacher opted for a language centred approach because, she claimed, «my students need mainly vocabulary.The third one opted for an amalgamation of both a language-centred approach and a skills-based approach because for her the main aim to study English is to use it for their specialty.

Question 5: What teaching materials do you use? Why have you chosen it?

The first teacher uses a mix of authentic and non-authentic materials, she explained that she meant by authentic material to choose what can make her save time, energy, motivate the learners and suit their learning style and bring a high content of the specialty which is suitable for face to face learning such as textbooks, data show and, simulations. The second teacher uses printed articles and boards. The third teacher mentioned that she uses mainly printed articles, because it is easy to access and that in their library they only have books in French.

Question6: Do you use Code-Switching? Why?

All the teachers answered "Yes". The first interviewee mentioned that she had to use code-switching to facilitate communication. The second interviewee stated that it is easier to explain using translation. The third interviewee has mentioned that she needs to use it because she feels more comfortable using Arabic or French and she added that even if she has an acceptable level in English it is not perfect.

Question7: When you translate English into another language, do you focus more on the vocabulary aspect or the grammar aspect? Does this help your students?

Both the teacher one and two focuses on the vocabulary aspect, teacher one added that she focuses on the vocabulary aspects regardless of grammatical accuracy and that she focuses on grammar only if it is a matter of voice, mode, or articles but that vocabulary is "The bone of all skills". Whereas teacher three stated that she focused more on the grammar aspect because according to her, vocabulary is not English it is mainly Latin. The three teachers seem to agree that code-switching helps their students in learning.

Question8: Do you think that the course provided to the third year Biochemistry should be taught by a Subject specialist, an English language teacher, or collaboration between a subject specialist and an English language teacher.

Teacher one stressed the importance of teaching English by an English language teacher. If the students are highly specialized, they need English for specific purposes. Therefore, a collaboration should take place to solve the problem, but one cannot be specialized in every field .and sometimes the collaboration can take place between the English language teacher and the students since they are specialists. The second teacher assert that the course should be taught by collaboration between a subject specialist and an English language teacher and she added that it should not be taught by an English language teacher because he

will focus more on the linguistics aspects. The third teacher opted for a subject specialist but she added that the teacher must have a good background in English and she said that an English language teacher should not teach the course because he will focus more on the linguistics aspects and that she never saw collaboration so she can't judge about it.

Question9: What challenges do you meet in designing the course for the third-year Biochemistry students?

The first teacher revealed that the challenges are at many levels and that if one is approaching the course design from a needs analysis approaches the challenges start from the beginning, who are the learners, their level, their wants, their needs. The language proficiency is an issue, the motivation; the groups keep changing, the time and the assessments. The second teacher alleged that she had too many modules to teach and that she can't focus on the English module, and that she also faces challenges with students because they lack curiosity and self-confidence. The third teacher mentioned that the biggest challenge she faces is translating the content she uses from French to English.

Question10: Do you think that the present course is helping in improving the English language any further?

The first and third teachers answered "No". The second teacher answered "yes" but she added that the method should be improved.

Section C: Teacher's perception of the students

Question1: How would you classify your students' level in English?

All the teachers focus on the specialty content when assessing their students. Teacher two added "I need to evaluate how my students retrieve information and knowledge using English".

Question2: How would you describe your students' Motivation during the lectures? Do you know why?

Teacher one reported that in the beginning, her students showed hesitation in taking the course and that they were not motivated due to their past experiences but once they shifted to how the students communicate in the classroom motivation would be different. Teacher two reported that her students are motivated because she encourages group work, peer

assessment, and peer feedback. The third teacher affirmed that some of her students are more motivated in the language itself because of immigration purposes

Question3: How does your student find the subject matter in English?

The first teacher perceived the challenges as varying from less challenging to more challenging and justified that it is challenging because it is taking the language from above the sentence level and they are not required to mechanically use the language but to put it into context. Teacher two claimed that her students perceive the subject matter in English interesting because she has used materials related to their specialty. The third teacher reported that her students find the subject matter in English very simple because she has used subjects related to their specialty and she added that it is extremely accessible for them.

Question4: According to you what are the main lacks and weaknesses of the third- year Biochemistry students in the four basic skills (listening, speaking, reading, and writing)?

The first and third teachers ranked writing as the most challenging skill and the first interviewee added for every specialty and if it is on the top then automatically the other skills are the reason why. Its means that if they have a problem in writing they used to have a problem in reading since writing is the result of all the other skills. The second teacher ranked speaking as the most challenging skill.

Question5: According to you what are the target needs of your students in English?

The three teachers chose all the options available to be able to read specialist literature, to give oral presentations, to be able to write an abstract, to be able to translate articles from English to French and vice versa, to comprehend presentations and lectures

Section D: Suggestions

Do you have any other suggestions?

The first teacher suggested teachers' training, and development in designing courses, also teachers' training in EST and EAP, and providing sufficient material and more practical sessions as well as promoting the E-learning to promote autonomous learning and self-evaluation. Teacher two proposed to give more importance to ESP in the department of language and literature and to train teachers that will teach in other departments. The third interviewee advocated collaboration between subject specialists of the department of biology

and English language teachers of the department of language and literature, she also suggested an ESP training for Subject specialists and advised to integrate an audit committee of the English language at the University.

3.4.4 Teacher semi-structured interview results discussion

After the analysis of the semi-structured interview, we have reached the following results.

The Biology department relies on both subject specialists and language English teachers to teach English, this is one of the major debates on whether the ESP practitioner should be a language teacher or a field specialist. Certain skills should be acquired by the ESP teacher to be effective and successful in his profession. He should be able to process 1. The English language knowledge, 2. Thorough command of course design 3. Expert knowledge of the related field of science (Maleki, 2008). The language teacher has 1 and 2 but lacks 3 and the field specialists have 3 but lacks 1 and 2.

The two field specialists mentioned that they had taught only in the department of biology whereas the English language teacher has mentioned that she has taught in several other departments. We need first to mention that an ESP practitioner must be qualified as a good language teacher besides specific qualities to teach learners of a particular domain. As Dudley-Evans & St John (1998) have stated "The methodology of an ESP teacher may not differ radically from that of General English." (p.13). This is why the English language teacher was able to teach more specialties.

Of the three interviewed teachers only one had received ESP training, we can conclude that there is a serious lack of teachers' training to be able to effectively design and present the course. Special training of teachers is very important mainly because it allows them to understand students' needs better, this is of an extreme importance for ESP courses because based on what they need the teachers can offer them the appropriate knowledge and this knowledge would be helpful to them (Bracaj, 2014). All the teachers were aware of the importance of ESP training and seemed enthusiastic about the idea.

All the interviewees have stated that there is no pre-determined syllabus or textbook they are asked to follow and that the ESP course is not specified so the course design is left to the teachers, the majority of the teachers stated that they had to ask their students about their objectives to determine their language needs and this is a crucial step in designing the course since the result of needs analysis will assist the ESP practitioner in identifying important

students' information, the teacher will be aware of their future professional requirements, as well as their language skills requirements and inadequacies, the practitioner can use this information to identify the language course's objectives and select material that satisfies those needs (Simion,2015).

Both of the field specialists focused mainly on translating articles and abstracts and understanding articles, this goes along with the second most important objective for the students which is translating and reading articles. We can notice that both teachers neglected the communication aspect and only the English language teacher focused on it, reinforcing the actual use of English in a particular context which is the top one ranked objective for the students it is important to match the students needs with the objectives of the course. In order to achieve a better career, productive skills are just as crucial as technical qualifications. According to Crosling and Ward (2002), oral communication predominates at all level of work lace activity, and we have noticed almost the totality of the students thinks that English is very important for their future career. Furthermore, it is well known that ESP should be taught in a CLT framework.

Concerning the approach used to teach one field specialist opted for the language-based approach, it is not the best method to teach ESP and was criticized for many reasons as Hutchinson and Waters (1987) have stated, it does not take into consideration the learners' needs and it is static, systematic and decontextualized. The two other teachers have opted for an amalgamation of a learning-based approach and a skills-based approach.

For the Material selection both the field specialist stated that they rely mainly on using printed articles and the board due to the lack of audio-visual material in the department, the second interviewee added that all the books in the library are in French so they have to retrieve articles from the web. The selected material does not fit the preferred students' material which is audio-visual this may affect their motivation and concentration during the sessions. Only the language English teacher was aware of the importance of using authentic material. Numerous scholars such as Gehard (1996), Melvin and Stout (1987), Brinton (1991), Dudley-Evans &St Jhon (1998) stressed the crucial role of authentic material in concrete learning, motivating learners, suiting the different styles, improving classroom management and interaction patterns within CLT framework.

All the teachers seemed to need to use translation, there are several reasons why teachers use translation, some were stated by them such as facilitating communication, and

they feel more at ease using their mother tongue. For Harmer (2001) when using the mother tongue, the teacher creates a comfortable psychological environment for the learner. Anton and Dicamilla (1999) believe that the use of the mother tongue can assist students in maintaining common goals and externalizing their inputs.

The majority of the teachers believe that the course should be taught by collaboration between an English language teacher and a subject specialist and the first interviewee added that the collaboration can even take place between the teacher and the students. Dudley-Evans & St Jhon (1997) proposed that the team teaching approach is one of the best solutions to the question of who should teach the ESP course.

The major problem that faced the teachers is the language proficiency the majority of the teachers were not satisfied with the level of their students, another problem is the time according to them the time allocated for the English course is not enough. The teachers added that the course is not helping the students to improve their English language and an improvement in the content as well as the method is necessary.

All the teachers focused on the content when assessing their students. The ESP area of evaluation is concerned with content, themes, and topics for a specific discipline, and includes a higher technical language level and a communication role that allows learners to communicate their importance more specifically in a specific academic, professional, and vocational field. In this sense, each ESP's performance evaluation can be defined as an assessment of the competencies required to succeed in the language target in the context in which it is used. All the teachers agreed that their students show motivation.

The participants were asked to evaluate the students' English lacks during the interview, and they all classified the lacks as follows: writing was ranked first, and speaking was ranked second. This result seems to go in correlation with the most difficult skills the students have selected in the questionnaire.

The majority answered that the students did not find any difficulties in studying the subject matter in English this may be because the teachers are using content related to their specialty and that the students are highly specialized, since the group of students feels confident this will lead to a stronger motivation for studying ESP, and indeed the majority of the teachers claimed that their students were highly motivated.

All of the interviews expressed agreement with all of the options offered by the interviewer, focusing on the students' linguistic needs. They all agreed that the students need to be able to read specialist literature since they will need to be able to understand that literature in English especially when doing further research, giving oral presentations, to be able to write an abstract, to be able to translate articles from English to French and vice versa most of the teachers focused a lot in this later and said that it is one of the most important objectives their students need to achieve, To comprehend presentations and lectures.

3.5 Pedagogical implications

3.5.1 Course design

The data collected through the two research instruments during the needs analysis phase was analyzed and used to construct a set of goals and objectives, as well as to choose methodology, teaching material. The completed needs analysis in this study provides information on the various components required in building a course that fits the needs of the students of Biochemistry at Kasdi Merbah University Ouargla. Those components consist of the learners' personal information, the learners' English language information. The lacks, wants, and needs of the learners, how the language will be used in the target situation.

3.5.1.1 Aims of the course

According to the needs analysis conducted in this research in addition to the interview held with the teachers, we come to a conclusion that the students of third-year Biochemistry in the Department of biology need English for:

- To read specialist literature.
- To give oral presentations.
- To write an abstract.
- To translate articles from English to French and vice versa.
- To comprehend presentations and lectures.

3.5.1.2 Goals and objectives

By the end of the course, the learners should be able to write well in English and be knowledgeable of scientific vocabulary, particularly that relating to their field of study. Learners will have to answer questions and execute written activities during lectures and tests. In addition, they must be able to comprehend translated scientific papers and write adequate abstracts in their field, as well as give oral presentations.

The objectives concerning each skill are as follows:

Speaking

By the end of the course the learner will be able:

- To give an oral presentation of ten minutes about a topic related to Biochemistry.
- To explain a laboratory experiment protocol by listing the steps to a classmate.
- To rephrase a lesson explained by the teacher.
- To define orally a word related to the field's terminology.

Writing

By the end of the course the learner will be able:

- To write a coherent and grammatically correct paragraph.
- To write an abstract of a specific article related to their specialty.
- To paraphrase scientific articles related to their fields.
- To summarize an article or a chapter related to their fields.
- To translate an article from English to French or vice versa
- To take notes on lectures or reading

Listening

By the end of the course the learner will be able:

- To understand short lectures concerning the content area when the vocabulary is familiar, through their ability in answering questions about the lecture.
- To follow instructions that is given in the class concerning activities and assignments, through their proper performance of those instructions.

Reading

By the end of the course the learner will be able:

- To scan a passage quickly in order to find specific information
- Use an increasing amount of vocabulary in the subject area and also in general academic language.

3.5.1.3 Course content

According to Hutchinson and Waters (1999), if the students and the teachers are aware of what they require, the course's content will be more effective, and the benefits to the course's success will be greater; thus, a reliable content that meets the needs of these Biochemistry students is necessary. Since the results of the needs analysis revealed that reading and writing, are the two most important skills for the students and the two most difficult skills for the students the focus will be on them and because listening and reading were rated by the students as the easiest skills they will be used as a learning style. The content should be introduced with respect to the balance of the use of the four main language skills, with little focus on the learners' preferred skills.

3.5.1.4 Course organization

The course will take place over two semesters, regarding lectures there should be two sessions per week for the group, there is no need to divide students into groups as the number is small

3.5.1.5 Classroom activities

The findings of this study show that Biochemistry students need English to achieve a variety of goals, including reading scientific articles, journals, and reports, translating articles, writing abstracts, and so on. To accomplish these goals, Biochemistry students must improve their proficiency in all four language abilities. Indeed, the objectives of language teaching are defined in terms of: listening, speaking reading, and writing.

It is extremely beneficial to shed light on how to teach the four skills and to show some of the ideas and techniques for effective learning. Indeed according to Widdowson (1979), “Speaking and listening are expressed through the aural medium, and reading and writing are expressed through the visual medium.”

Here is a list of some of the activities proposed in order to teach each skill

Listening

- Short lectures throughout each class meeting to help students improve their note-taking - skills as well as other skills, which can be done with the help of visual aids and real items.
- Listening to the teacher reading out loud in order to perceive the teacher’s intonation patterns, and also pronunciation.
- Taking notes.
- Asking students to answer questions about a specific topic they have listened.
- Dictation.

Speaking

- Text-based discussion.
- Free speeches.
- Role plays tasks.
- Pair work or group work for solving problems.
- Oral presentation in their specific field of research.

Reading

- Reading articles related to their fields.
- Reading aloud.
- The exercises of using fill in the blank vocabulary.
- Students use what they read so as to perform a task.
- Extensive reading through asking the students to report on materials that they read outside the classroom, in which it is relevant to their topic.

Writing

- Devote pair and group work and encourage collaborative writing.
- Note-taking.
- Written activities, i.e. filling the gaps through.
- Written summary of an article.
- Translating articles or abstracts.
- Copying from the board.
- Sentences-combining which requires students to combine long sentences with short ones.
- Re-ordering misplaced sentences that help in building the understanding of the paragraph structure.
- Note-taking.
- Writing a description of scientific phenomena or experimental procedure.

3.5.1.6 Material selection

Hutchinson and Waters (1987) have identified three types of materials, existing materials, materials writing, and materials adaptation. However, textbooks and handouts are the most well-known materials utilized in ESP. In order to improve teaching efficacy, the teacher must consider the usage of various materials such as technology devices. The learners are proven to be better at learning when they use more than one sense in learning, such as when audio-visual materials are used, as they provide the learner with new experiences, and enjoyment in learning which makes the learners more motivated and eager to learn, and that is very useful in developing the students' listening and speaking skills, unlike the usual materials such as textbooks and printed articles, although they still have some positive effects but not to all students.

After conducting the needs analysis we have selected the following materials:

- Audiovisuals materials (Data show).
- Printed articles.

- Posters.
- Dictionaries.

3.5.1.7 Evaluation and assessment

- Quizzes, assignments.
- Written test at the end of each unite.
- Oral presentations (projects).
- Final semester exam.

3.6 Sample lessons

Lesson one sample

Allotted time: 1 hour and 30 minutes

Aims

By the end of the lesson students should be able to:

- Take notes.
- Write an abstract.
- Make a short oral presentation.

Materials

Data show, Speakers, Board.

Activity one

Listen to the following record and take notes about the main laboratory safety procedures.

Content of the record:

“Laboratory safety involves the development of skills and the responsibility an must be in every Biochemistry curriculum. This means that safety awareness must be integrated into each laboratory course including research with increasingly broader scope at more advanced level. The creation of a culture of laboratory safety assume responsibility for continuing review of safety issues with students in teaching and research laboratories, especially the people responsible for under graduated instruction, often graduate student or instructors. Faculty must lead by example in a coordinate department safety effort. At the administrative level this will involve implementation of chemical hygiene plan that is in agreement with any campus chemical hygiene/safety effort and must address the safe handling, storage, and disposal of chemicals. Eye wash and showers must be in operating condition, and fume hoods with proper sashes are essential. Any one working or visiting the lab must be wearing goggles, and consumption of food or drink must not be permitted. A clean, uncluttered laboratory is more likely to encourage careful work.”

Activity two

Using your notes try to write an abstract of the record you have listened to.

Activity three

Look at the following pictures (pictures shown on data show)

Figure 3.1

Mandatory signs; chemicals manufacturing,



Work in pairs and prepare a short presentation of 10 minutes where you speak about the basic safety rules to follow in the laboratory.

Lesson two sample

Allotted time: 1 hour and 30 minutes

Aims

By the end of the lesson students should be able to:

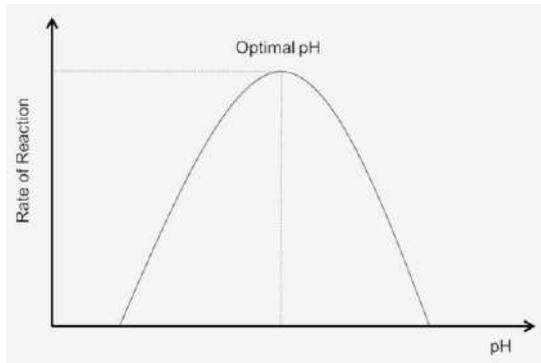
- Read and describe diagrams.
- Write a short paragraph.
- Translate a text.

Materials

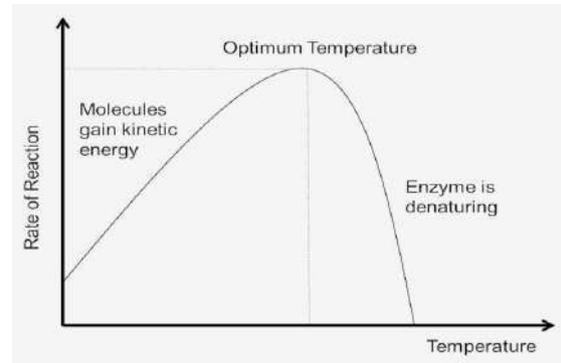
Printed diagrams, board, printed text

Activity one

Look at the diagrams below



Effect of PH on Enzymatic Reaction



Effect of Temperature on Enzymatic Reaction

Answer the following question:

- 1- What does the diagram 1 and 2 represent?
- 2- Write a short paragraph in which you describe the effect of the temperature and the PH on the enzymatic reaction.

Activity two

Complete the extract below using information from the diagrams.

- 1- Enzymatic.....increases as temperature.....
- 2- Enzymatic reaction decreases when temperature.....
- 3- Enzyme activity is at its.....at the optimum PH and optimum temperature
- 4- When the PH value increase above or decrease below the optimum PH, the decreases.

Activity three

Read the text below then translate it into French

“Enzymes are the most important catalysts and regulators indispensably involved in each process in living organisms. Any investigation of the cell metabolism requires a thorough understanding of enzyme action. Enzymes are very sensitive markers for correct function and, consequently, also for dysfunction of the metabolism, serving as indicators both for health and manifestation of the diseases. Accordingly, they are used as invaluable tools in medical diagnostics. Beyond that, enzymes are applied in many technical operations. They play an essential role in the environmental processes in the microbial world in waters, rivers, lakes, and soil, and are important for filter plants as well as for fermentation procedures in dairies and breweries.”

Conclusion

The analysis of the student's questionnaire and the teacher's semi-structured interview has permitted us to determine the major steps in designing an effective and efficient ESP course for the third year Biochemistry students in the department of biology it was concluded that the main skills that seemed to be of higher importance for the target learners were the productive skills, several goals and objectives were determined as well as methods of assessment and the appropriate material. The semi-structured interview has allowed us to determine the gap in the actual course; in consequence, to be able to recycle it for the benefit of the students it was also possible to draw some solutions and recommendations for a better ESP course process.

GENERAL CONCLUSION AND RECCOMANDATION

The attribution of the English module at the department of biology at Kasdi Merbah University Ouargla to English language teacher or to specific subject specialist without providing any syllabus led to either focusing mainly on teaching grammar and terminology in the first case or focusing on the content in the second case and this has not achieved the aimed objectives of English for specific purposes teaching. Biochemist students need English not only for academic purposes but also for occupational purposes but unfortunately the inadequacy of the actual teaching in the department did not permit to the students to achieve the objectives required in their specialty and did not allowed their needs to meet their aims. Thus a needs analysis is necessary to provide an appropriate course that responds to the third year biochemist students needs.

The present study was held to investigate the needs of third year biochemistry students in the use of English for specific purposes at Kasdi Merbah University Ouargla. The students' needs were analyzed through the use of a structured questionnaire submitted to the all population of third year biochemistry students and a semi-structured interview held with three teachers who have taught at the department of Biology.

The conducted research follows the descriptive method since it aims to describe the correlation between two variables; an independent variable which is the needs of the third year- Biochemistry students at Kasdi Merbah University Ouargla, and a dependent variable which is the course design.

The finding revealed the great importance of learning English and the necessity to design an effective ESP course for the third year Biochemistry students as well as the urgent need to provide ESP teachers with the required training to achieve successful teaching this confirmed the first hypothesis mentioned in the research that the current ESP course that are taken in the department of Biology can be improved by identifying the students' needs, lacks and wants. The students were aware of the importance and necessity of English for their academic and occupational purposes and the teachers were aware of the necessity of taking ESP training.

As mentioned in the hypothesis number three, needs analysis was the major step in designing a course its provided us with valuable information about the students needs, the productive skills were their major difficulty, and the most needed for the students mainly to

take part in oral discussion as well as read and translate scientific articles, and the majority want to learn by listening, and taking notes and writing from the board. The needs analysis allowed us as well to select the adequate materials as well as the preferred way of assessment.

On the light of the findings we put forward the following recommendations:

- The necessity to conduct a continuous, cyclical needs analysis in order to match the aims of the learners to their needs and to allow the learners to reach the intended outcomes.
- Designing convenient syllabus and providing teachers with appropriate materials.
- All the four language skills should be emphasized with priority to productive skills.
- Teachers should receive training session on ESP course design.
- Collaboration between ESP teachers and subject specialist is recommended.

REFERENCES

- Allwright, R. (1981). What do we want teaching materials for? *English Language Teaching Journal*, 36(1), 5-18.
- Antón, M., DiCamilla, F.J. (1999). Socio-cognitive functions of L1 collaborative interaction in the L2 classroom. *The Modern Language Journal*, 83(2), 233–247.
- Basturkmen, H., Richeterich, R., & Chancerel, J. (1980). Identifying the needs of adults learning language. Oxford: Pergamon Press.
- Basturkmen, H. (2006). *Ideas and Options in English for Specific Purposes*. New Jersey: Lawrence Erlbaum Associate, Inc.
- Basturkmen, H. (2010). *Developing courses in English for Specific Purposes*. Great Britain: Palgrave Macmillan.
- Bloom, B.S., Hastings, J.T., & Madaus, G.F. (1971). *Handbook on formative and summative evaluation of student learning*. New York: MacGraw-Hill.
- Bower, R. (1980). The Individual learner in the general class. In H.B. Altman and C.V. James, (eds). *Foreign Language Teaching : Meeting Individual Needs*. Cambridge University Press.
- Bracaj, M. (2014). *Teaching English for Specific Purposes and Teacher Training*. *European Scientific Journal*, 10(2).
- Bremner, S. (2008). Some thoughts on teaching a mixed ability class. *Scottish Languages Review*, 18, 1-10.
- Brindley, G. (1989). The Role of Needs Analysis in Adult ESL Programme Design. In R. Johnson (Ed.), *the Second Language Curriculum*. Cambridge: Cambridge University Press.
- Brown, A. (1995). The effect of rate variables in the development of an occupation-specific language performance test: *Language Testing*. SAGE journals, 12(1), 1-15.
- Bryman, A. (2001) *Social Research Methods*. Oxford University Press, Oxford.
- Burksaitiene, N., Tereseviciene, M. (2008) .Integrating alternative learning and assessment in a course of English for law students: assessment and evaluation in higher education. *Lithuania, Vytautas Magnus University*, 33(2), 155-166.

- Chenyiic, Y.C. (2010). Content based business English course for EFL. *The International TESL Journal*, 16(1).
- Cohen, L., Manion, L., & Morrison, K. (Ed). (2011). *Research Methods in Education*(7thed.). London: Routledge.
- Coleman, H. (1988). Analysis language needs in large organization. *English for Specific Purposes*, 7(3), 155-169.
- Corder, S.P. (1973) .*Introducing applied linguistics*. Middlesex: Penguin.
- Creswell J.W., Tashakkori. A. (2007). Editorial: Exploring the Nature of Research Questions in Mixed Methods Research. *Journal of Mixed Methods Research*. 1(3), 207-211.
- Creswell, J.W. (Ed). (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston, MA: Pearson.
- Crosling, G., Ward, I. (2002). Oral communication: The needs and uses of business graduate employees. *English for Specific Purposes*. 21 (1), 41-57.
- Cummins, J. (1979). Linguistic interdependence and the Educational Development of Bilingual Children. *Review of Educational Research*, 49, 222-251.
- Douglas, D. (2013). *Assessing language for specific purposes*. Cambridge: Cambridge University Press.
- Dornyei, Z. (2003). Attitudes, orientation, and motivations in language learning: Advances in theory, research, and applications. *Language learning*, 53, 3-32.
- Dudley-Evans, T., St. John, M.J. (1998). *Developments in English for Specific Purposes*. Cambridge: Cambridge University Press.
- Gardner, R.C., Lambert, W.E. (1972). *Attitudes and Motivation in Second Language Learning*. Rowley, MA: Newbury House Publishers.
- Gardner, D., Miller, L (1999) .*Establishing self-access: From theory to practice*. Cambridge, UK: Cambridge University Press.
- Gatehouse, K. (2001). Key issues in English for specific purposes (ESP) curriculum development. *Internet TESL Journal*, 7(10).

- Gravatt, B., Richards, J., Lewis, M. (1997). Language needs in tertiary studies. Auckland: Occasional Paper Number 10, University of Auckland Institute of Language Teaching and Learning.
- Graves, K. (1996). Teachers as course developers. England: Cambridge University Press.
- Haddam, F. (2015). A Course Design in ESP: the case of masters' students of biology. University of Tlemcen.
- Harmer, J. (Ed) (2001). The Practice of English Language Teaching (3rd ed.). Harlow: Longman.
- Hutchinson, T., Waters, A. (1987) English for specific purposes: A learner-centered approach. Cambridge: CUP.
- Hyland, K. (2006). English for academic purposes. USA and Canada: Routledge.
- Ibrahim, A. M. (2017). Specialization professors' perception on their students' needs for ESP: PEH students' case. English for Specific Purposes World, 54(19), 1-22.
- Jack, C.R. (2006). Communicative Language Teaching Today. Cambridge University Press.
- Jordan, R.R. (1997). English for Academic purposes. A guide and resource book for teachers. Cambridge University Press, p404.
- Johns, A.M., Dudley-Evans, T. (1991). English for Specific Purposes: International in scope, Specific in purpose. TESOL Quarterly, 25, 297-314.
- Kennedy, H. and Bolitho, R. (1984). English for Specific Purposes; London: Macmillan.
- Kumar, R. (1996). Research Methodology: A Step-By Step Guide for Beginners. Sage Publications, London.
- Long, M. (2005). Second language needs analysis. Cambridge: Cambridge University Press.
- Lowe, E. (2009). Principles of course design. Retrieved Mars, 2016 from www.scientificlanguage.com/ESPCourseDesign/PDF.
- Lyle, S. (2010). An investigation of pupil perception of mixed-ability grouping to enhance literacy in children aged 9-10. Educational studies 25(3), 283-296.

- Macalister J., Isp Nation. (2004). *Language Curriculum Design*. Routledge Taylor & Francis: Group New York And London.
- Mackay, R., Mountford, A. (1978). *English for specific purposes: A case study approach*. London. Longman
- Maleki, A. (2008). *ESP Teaching: A Matter of Controversy*. *ESP World*.7(1(17)), 1-21.
- Marczyk, G., DeMatteo, D., & Festinger, D. (2005). *Essentials of Research Design and Methodology*. New York, NY: John Wiley & Sons, Inc.
- Marshall, C., Rossmn, G. B. (2006). *Designing qualitative research*. Thousand Oaks, Calif: Sage Publications.
- McDonough, J. (1984). *ESP in Perspective: A Practical Guide*. London and Glasgow: Collins ELT.
- Munby, J. (1978). *A sociolinguistic model for defining the content of purpose-specific language programmes*. Cambridge University Press.
- Nitko, A.J., Brookhart, S.M. (2005). *Education Assessment of Students*. New Jersey: Person Education Ltd.
- Nuan, D. (Ed). (1988). *Syllabus design (3rd ed)*. UK: Oxford University Press.
- Nuan, D. (1990). *Using learner data in curriculum development*. *ESP Journal*, 9, 17- 32.
- Nurpahmi, S. (2016). *ESP Course Design: an integrated Approach*, *LENTERA PENDIDIKAN*, 19(2) ,172-181.
- Paltridge, B., & Starfield, S. (2013). *The handbook of English for specific purposes*. UK: Wiley Blackwell.
- Patton, M. Q. (Ed) (2002). *Qualitative research and evaluation methods (3rd ed.)*. Thousand Oaks, CA: Sage Publications.
- Pilot, D. F., Hungler, B. P. (1999). *Nursing research: principles and methods*. Philadelphia: JB Lippincott Company.
- Richards, J.C (2001). *Curriculum Development In Language Teaching*. Cambridge: Cambridge University Press.
- Richards, J.C. (2006). *Communicative Language Teaching Today*, Cambridge University Press.

- Richterich, R., Chancerel, J.L. (1980). *Identifying the Needs of Adults Learning a Foreign Language*. Oxford: Pergamon.
- Robison, P. (1991). *ESP Today: A Practitioner's Guide*. New York: Prentice Hall.
- Savignon, S.J. (1983). *Communicative competences: theory and classroom practice: texts and contexts in second language learning*. Reading. Addison-Wesley publishing company
Palgrave Macmillan, 40(3), 464-465.
- Schutz, N. Derwing, B (1981). *The problem of needs assessment in English for specific purposes, Some Theoretical & Practical Considerations*, in Mackay. R & Palmer. J.D (eds), *Languages for specific purposes, program Design and Evaluation*, 29-44.
London: Newbury House.
- Simion, M.O. (2015). *Needs Analysis in English for Specific Purposes*. *Annals -Economy Series*, 1(2), 54-55.
- Simona, S. (2012). *Needs Analysis and Programme Planning in Adult Education* .Verlag Barbara Budrich Series: *Study Guides in Adult Education*, p67.
- Songhori, H.M. (2008) *introduction to needs analysis*. *English for Specific Purposes world*,4,1-25.
- Stevens, P. (1977). *Special-purpose language learning: a Perspective*. Language Teaching. Cambridge University press.
- Swales , J.(1988).*Communication language reaching in ESP contexts*. *Annual Review of Applied Linguistics*, 8, 48-57.
- Swan, M. (1990). *A critical look at the communicative approach*. *ELT Journal*, 39(1).
- Sysoyev, P (2000). *Developing an English for Specific Purposes Course Using a Learner Centered Approach: A Russian Experience*. *The Internet TESL Journal*, 6(3).
- Tashakkori, A., Creswell, JW. (2007). *Editorial: The new era of mixed methods*. *Journal of mixed methods Research*, 1(3).
- Taylor-Powell, E. (1998). *Questionnaire Design: Asking Questons with A Purpose*, University of Wisconsin-Extension. Mary G. Marchall Publications.

- Todd, D. J. (1979). *Mixing Qualitative and Quantitative Methods: Triangulation in Action*. *Administrative Science Quarterly*, 24 (4), 602-611. Sage Publications, Inc.
- Trimble, L. (1985). *English for science and technology: A discourse approach*. Cambridge: Cambridge University Press.
- Van Ek, J., Alexander, L.G. (1977). *The threshold level for modern language learning in schools*. London: longman.
- West, R. (1994). *Needs analysis in language teaching*. *Language Teaching*, 27(1), 1- 19.
- Widdowson, H. G. (1983). *Learning purpose and language use*. Oxford: Oxford University Press.
- Witkin, B. R., & Altschuld, J. W. (1995), *Planning and conducting needs assessments: A practical guide*. Thousand Oaks, California: SAGE Publications.
- Xenodohidis, T.H. (2002). *An ESP curriculum for Greek EFL students of computing: A New Approach*. *ESP World*, 1(2).

Résumé

La recherche menée étudie le rôle important de l'analyse des besoins des apprenants dans l'élaboration d'un cours efficace et pertinent d'anglais spécialisé. Cette recherche est concernée par les étudiants de troisième année Biochimie à l'université de Kasdi Merbah Ouargla. Notre travail examine si les cours d'anglais spécialisé dispensés aux étudiants respectent ou non la procédure nécessaire et suivent les méthodes appropriées. L'utilisation combinée des méthodes qualitatives et quantitatives a été effectuée. Deux outils pour recueillir les données ont été utilisés. Un questionnaire et une interview semi-structurée, les résultats ont montré qu'un recyclage du cours d'anglais spécialisé est nécessaire dans les plus brefs délais au profit des étudiants. Les compétences productives étaient les aspects les plus promenant des besoins des apprenants en anglais, en plus de leur besoin en vocabulaire pour être capable de comprendre les articles scientifiques ainsi que la nécessité d'être capable de traduire. Cette recherche a été effectuée dans l'espoir qu'il soit accordé plus d'attention à l'anglais spécialisé dans la spécialité de Biochimie, ainsi qu'au rôle crucial de l'analyse des besoins des apprenants dans la réalisation de leurs objectifs.

Mots-clés : Anglais spécialisé(ESP) – l'approche de la conception du cours – analyse des besoins de l'apprenant – la conception du cours anglais spécialisé - anglais pour les sciences et la technologie.

الملخص

يدرس البحث الذي تم إجراؤه الدور المحوري لتحليل متطلبات المتعلمين بهدف تطوير كفاءة و فعالية حصص الانجليزية لأغراض خاصة. هذه الأطروحة أجريت و بصفة خاصة على طلاب السنة الثالثة جامعي تخصص كيمياء حيوية على مستوى جامعة قاصدي مرباح ورقلة. يدرس عملنا ما إذا كانت حصص الإنجليزية لأغراض خاصة التي يحظى بها طلبة الكيمياء الحيوية تراعي الأساليب المطلوبة و تتبع المنهج المقرر. استعملنا لذلك المقاربة النوعية و الكمية لجمع المعطيات و التي تمثلت في استبيان و مقابلة. أظهرت النتائج الحاجة الماسة لإعادة النظر في الدروس الحالية و تطويرها لفائدة الطلاب و كانت أهم جوانب احتياجاتهم هي تطوير المهارات الإنتاجية في اللغة الانجليزية بما في ذلك المصطلحات ذات الاستعمالات الخاصة و التي تصادفهم عند قراءة و ترجمة المقالات العلمية. كان من المتوقع أن هذا البحث سيسلط الضوء على وضعية مادة الإنجليزية لأغراض خاصة في مجال الكيمياء الحيوية و كذا الدور المهم الذي يقوم به تحليل المتطلبات في تلبية ما يهدف إليه الطلبة

الكلمات المفتاحية : إنجليزية لأغراض خاصة ESP – منهجية درس لغة إنجليزية لأغراض خاصة – تصميم درس – تحليل الاحتياجات – إنجليزية للعلوم و التكنولوجيا EST .

Appendix I

Questionnaire for third year biochemistry students



Ministry of Higher Education and Scientific Research

Ouargla University

English Language and Literature

Department



Dear students,

This questionnaire is a part of a needs analysis administered to Third Year biochemistry students of Kasdi Merbah University Ouargla, by answering this questionnaire you will help in designing an appropriate course.

You are kindly invited to answer the questions of the three sections, either by fill in the blanks or by ticking in the box that you will select.

Your identity is not required so please answer in a very objective way.

Thank you in advance for your cooperation.

section 01 General Background

1. Gender Male Female

2. Age 20 - 30 years More than 30

3. What was your grade in English in the Baccalaureate examination?

Bellow 10

Above 10

4. Do you consider English important for your studies?

Yes

No

5. Do you think English will benefit you in your future career?

Yes

No

6. Have you taken any prior General English training courses other than what you have received during your curriculum in middle and secondary course?

Yes

No

If yes where?

.....
.....
.....

Section 02: English Language Proficiency

1. Have you received any English for Science courses in your studies?

Yes

No

2. If yes, how?

.....
.....
.....

3. How would you assess your English level?

Beginner

Intermediate

Advanced

4. Rank the four English skills from the most difficult to the easiest

Listening

Speaking

Reading

Writing

5. What aspects of English do you find most challenging?

Grammar

Vocabulary

Pronunciation

Fluency

Punctuation

Others please specify

.....

6. Why do you want to study English:

To take part in oral discussions in English

To understand lectures

To read and translate

To get a diploma

Other (specify)

.....
.....

7. Classify the four skills according to what you need

- Reading
- Speaking
- Writing
- Listening

Section 03: Teaching methodology and classroom management

1. How many sessions would you prefer to have per week

- 1 2 more than 2

2. Do you prefer to study on

- Morning Afternoon

3. Are you willing to study in the weekend

- Yes No

4. Do you prefer to study:

- Face to face
- Via zoom meetings
- Both

5. How do you prefer to study in class? (you may tick more than one)

- Individually
- In pairs
- In small groups
- Others please specify

.....

.....

6. Do you prefer learning by (you may tick more than one)

- Listening and taking notes
- Writing from the board
- By memory
- By reading
- Solving problems
- Other , specify

.....

.....

7. Do you prefer learning using (you may tick more than one)

Audio, Visuals

Pictures

Internet

Blackboard

Other , specify

.....

8. Which of the following activities would you prefer (you may tick more than one)

Role play

Language games

Written exercises

Debates

Summarizing texts

9. How do you want to be assessed

Orally

Written test

Both

10. How frequently do you want to be assessed

Several times during the course

By the end of the Semester

.....

Section D: Suggestions

.....

Thank you for your cooperation

Appendix II

Teachers' semi-structured interview



Ministry of Higher Education and Scientific Research

Ouargla University

English Language and Literature

Department



Dear teachers,

This semi-structured interview is a part of needs analysis administered to the teachers of English course in the department of biology of Kasdi Merbah University Ouargla. By taking part in this interview, you will help in designing an appropriate course.

Thank you in advance for your cooperation.

Section A :Background information

1/ what is your gender? :

2/ Are you an English language teacher or a biochemistry specialist?

3/ How long have you been teaching English at the department of Biology?

4/ Have you taught in other departments?

Yes

No

- If yes which department ?

6/ Have you had some training in ESP teaching?

Yes

No

- If no do you think you need it? Why?

.....

- If yes please specify how?

.....

Section B: Teaching Methodology

01/ Is there any official syllabus or textbook for the third year Biochemistry students?

Yes

No

02/ Do you ask your students about the objectives they want to achieve?

Yes

No

03/What will the course be used for?

.....

04/ What is the approach you adopt in course designing? Why have you chosen it?

.....
.....
.....

05/ What teaching materials do you use? why have you chosen it?

.....
.....
.....

06/ Do you use Code-Switching? why?

.....
.....
.....

07/ When you translate English into another language, do you focus more on the vocabulary aspect or the grammar aspect? Does this help your students ?

.....
.....
.....

08/ Do you think that the course provided to the third year Biochemistry should be taught by:

- Subject specialist

- English language teacher

- Collaboration between subject specialist and English language teacher

09/ What are the challenges you meet in designing the course for the third year Biochemistry students?

.....
.....
.....

10/ Do you think that the present course is helping in improving the English language any further?

Yes

No

11/ When assessing your students do you focus more on evaluating their performance in General English or in the Biochemistry content ?

.....
.....
.....

Section C: Teacher's perception of the students

1/ How would you classify your students' level in English?

.....
.....
.....

2/ How would you describe your students' Motivation during the lectures? Do you know why?

.....
.....
.....

Appendix III

Lesson plan 01: Laboratory safety

Class: Biochemistry Level Third year

Allotted Time 1h30

Class description

There are 50 students in the group, all Females; they have English classes once a week.

Aims:

By the end of the lesson students should be able to

- Take notes.
- Write an abstract.
- Make a short oral presentation.

Materials:

Data show, Board, Speakers

Procedures:

Stage	Description	Material	Classroom interactions	Timing
Warm up	<u>Teacher role:</u> Ask students questions about laboratory safety to retrieve their pre-requisites about the subject, write the main key terms about the subject in the board <u>Student role:</u> Answer the questions, try to use the vocabulary related to the subject	Board	Teacher-student	20mins
Activity one: listening and writing	<u>Teacher role:</u> Play the record about the laboratory safety three times. In the first time	Tape, speakers, papers, pens,	Teacher-student	20mins

	<p>asking the students to only listen, in the second time asking them to take notes, in the third time asking them to check their notes.</p> <p><u>Student role</u>: Listening to the record and taking notes</p>			
Activity two: practice	<p><u>Teacher role</u>: Divide the students into groups of four and ask them to use their notes to write an abstract of the record they have listened to, supervise the students' work and give them feedbacks.</p> <p><u>Student role</u>: Assign a specific work for each member of the group and write an abstract</p>	Notes of the students, Papers, Pens,	Teacher- student Student- student	20mins
Activity three: Produce	<p><u>Teacher role</u>: Divide the students into pairs, display a picture representing the main mandatory signs for laboratory safety and ask the students to prepare a presentation of 10 minutes about the basic safety rules in the laboratory.</p> <p><u>Student role</u>: Use the information in the displayed picture, write the main ideas, prepare the speech, divide the roles between them</p>	Data show, Board	Teacher- student Student- student	30mins

Lesson plan 02: Enzymes

Class: Biochemistry

Level: third year

Allotted time: 1.30h

Class description:

There are 50 students in the group, all females; they have English classes once a week.

Aims

By the end of the lesson students should be able to:

- Read and describe diagrams
- Write a short paragraph
- Translate a text

Procedures

Stage	Description	Materials	Classroom interactions	Timing
Warm up	<u>Teacher role:</u> Write some key terms about the Enzymes on the board <u>Student role:</u> Try to define the key terms they can use the dictionary,	Board, Dictionary	Teacher- student	10 mins
Activity one: Read and write	<u>Teacher role:</u> Display the diagrams and present it, ask the students to try to answer the two questions. <u>Student role:</u> Observe the diagram, and try to answer the questions	Data show,	Teacher- student	30 mins
Activity two: Practice	<u>Teacher role:</u> Distribute a paper with an abstract and ask the students to fill in the gaps. <u>Student role:</u> Using the	Printed extract	Teacher- student	20 mins

	vocabulary they have acquired to fill in the gaps			
Activity three: Produce	<p><u>Teacher role:</u> Distribute a printed text in English, and divide the students into groups of three and ask the students to translate the text to French, they can use the dictionary, supervise the students and give them feedback.</p> <p>After the work is done select two or three translated text, write them on the board, correct them using peers feedback</p> <p><u>Student role:</u> Assigning a role for each member of the group, translate the text.</p>	Dictionary, Printed text	Teacher- student Student- student	30 mins

Abstract

The conducted research investigates the significant role of needs analysis in elaborating an efficient and effective ESP course. This paper is concerned with the third year undergraduate students of biochemistry at KMUO. Our work investigates whether the ESP course provided to third year biochemist students respects the needed procedure and follows the listed approaches or not. Both qualitative and quantitative approaches have been used; two tools to gather the data were employed a questionnaire and a semi-structured interview. The findings show that a recycling of the current course design is urgently needed for the benefit of the students; the productive skills were the most important aspects of their English language needs, in addition to their needs regarding vocabulary for specific use when reading scientific articles as well as translating articles. It was expected that the current research would provide more attention to the situation of ESP in the field of biochemistry as well as the crucial role of needs analysis in the fulfillment of the learners' purposes.

Key- words: ESP, Needs analysis, course design, ESP course approach, EST.

Résumé

La recherche menée étudie le rôle important de l'analyse des besoins des apprenants dans l'élaboration d'un cours efficace et pertinent d'anglais spécialisé. Cette recherche est concernée par les étudiants de troisième année Biochimie à l'université de Kasdi Merbah Ouargla. Notre travail examine si les cours d'anglais spécialisé dispensé aux étudiants respecte ou non la procédure nécessaire et suit les méthodes appropriées. L'utilisation combinée des méthodes qualitatives et quantitatives a été effectuée. Deux outils pour recueillir les données ont été utilisés. Un questionnaire et une interview semi-structurée, les résultats ont montré qu'un recyclage du cour d'anglais spécialisé est nécessaire dans les plus brefs délais au profit des étudiants. Les compétences productives étaient les aspects les plus promenant des besoins des apprenants en anglais, en plus de leurs besoin en vocabulaire pour être capable de comprendre les articles scientifiques ainsi que la nécessité d'être capable de traduire. Cette recherche a été effectuée dans l'espoir qu'il soit accordé plus d'attention à l'anglais spécialisé dans la spécialité de Biochimie, ainsi qu'au rôle crucial de l'analyse des besoins des apprenants dans la réalisation de leurs objectives.

Mots-clés : Anglais spécialisé(ESP) – l'approche de la conception du cours – analyse des besoins de l'apprenant – la conception du cours anglais spécialisé - anglais pour les sciences et la technologie.

المخلص

يدرس البحث الذي تم إجراؤه الدور المحوري لتحليل متطلبات المتعلمين بهدف تطوير كفاءة وفعالية حصص الانجليزية لأغراض خاصة. هذه الأطروحة أجريت وبصفة خاصة على طلاب السنة الثالثة جامعي تخصص كيمياء حيوية على مستوى جامعة قاصدي مرباح ورقلة. يدرس عملنا ما إذا كانت حصص الإنجليزية لأغراض خاصة التي يحظى بها طلبة الكيمياء الحيوية تراعي الأساليب المطلوبة و تتبع المنهج المقرر. استعملنا لذلك المقاربة النوعية و الكمية لجمع المعطيات و التي تمثلت في استبيان و مقابلة. أظهرت النتائج الحاجة الماسة لإعادة النظر في الدروس الحالية و تطويرها لفائدة الطلاب و كانت أهم جوانب احتياجاتهم هي تطوير المهارات الإنتاجية في اللغة الانجليزية بما في ذلك المصطلحات ذات الاستعمالات الخاصة و التي تصادفهم عند قراءة و ترجمة المقالات العلمية. كان من المتوقع أن هذا البحث سيسلط الضوء على وضعية مادة الإنجليزية لأغراض خاصة في مجال الكيمياء الحيوية و كذا الدور المهم الذي يقوم به تحليل المتطلبات في تلبية ما يهدف إليه الطلبة.

الكلمات المفتاحية : إنجليزية لأغراض خاصة ESP – منهجية درس لغة إنجليزية لأغراض خاصة – تصميم درس – تحليل الاحتياجات – إنجليزية للعلوم و التكنولوجيا EST .